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CONFERENCE IN THE MATTER OF POLLUTION OF THE SOUTH PLATTE RIVER BASIN IN THE STATE OF COLORADO. 2ND SESSION, DENVER, COLORADO, RECONVENED NOVEMBER 10, 1966. PROCEEDINGS

Federal Water Pollution Control Administration
Denver, Colorado

1966

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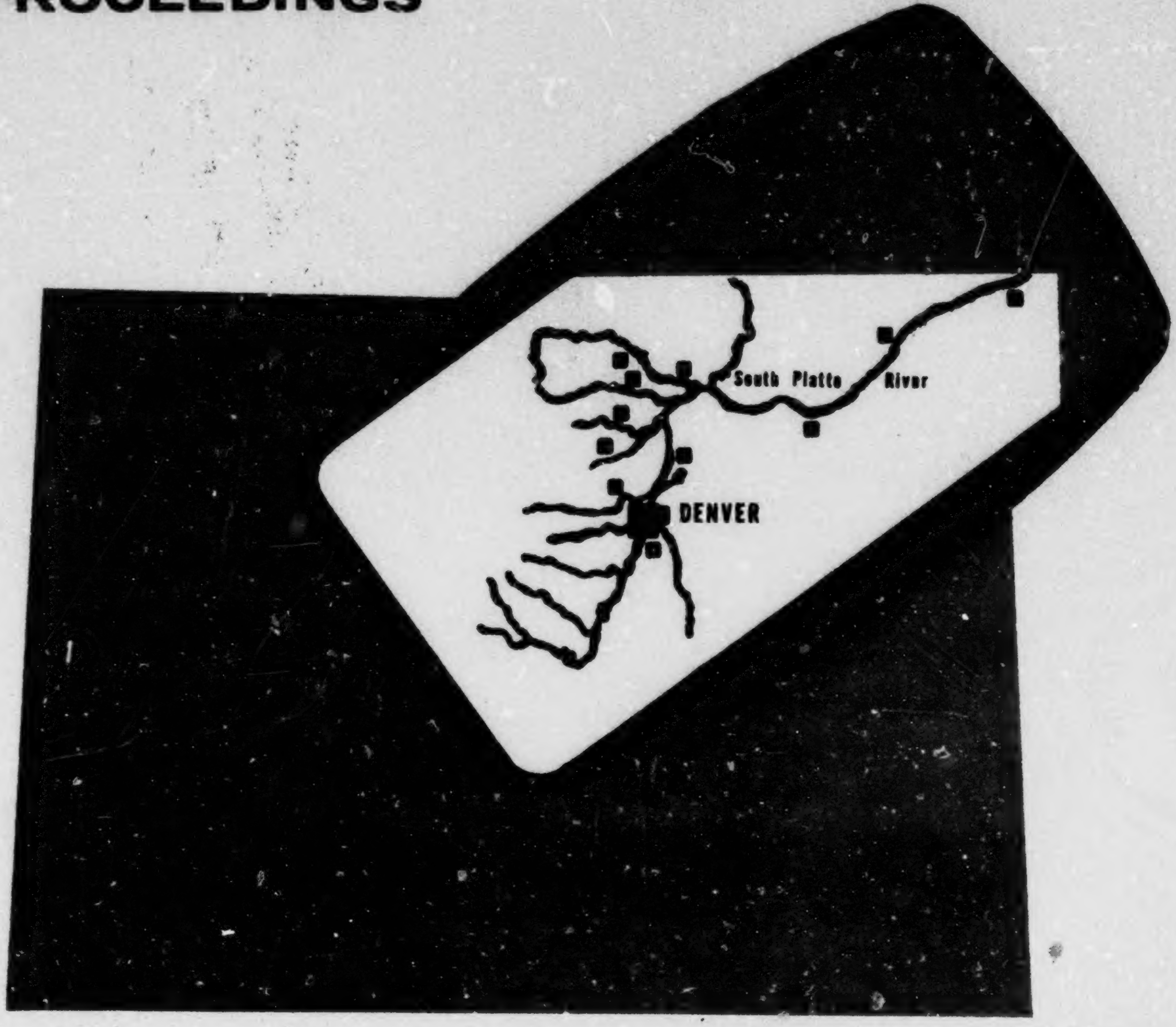

Conference

In the matter of Pollution of the South Platte River Basin in the State of Colorado

SECOND SESSION
DENVER, COLORADO
RECONVENED
November 10, 1966

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U. S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

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Reconvening of the Second Session of the Conference in the Matter of Pollution of the South Platte River Basin in the State of Colorado, convened at the State Capitol Building, Denver, Colorado, on Thursday, November 10, 1966, at 9:40 a.m.

PRESIDING:

Mr. Murray Stein, Assistant Commissioner for Enforcement, Federal Water Pollution Control Administration, Department of the Interior

ALSO PRESENT:

Hon. Frank C. Di Luzio, Assistant Secretary, Department of the Interior

CONFEREES:

Dr. Roy L. Cleere, Director, Colorado State Department of Health

R. T. Eckles, Coordinator of Natural Resources, Chairman, State Water Pollution Control Commission

CONFEREES (Continued):

Herbert C. Clare, Regional Director, Missouri River Basin Region, Federal Water Pollution Control Administration, Department of the Interior

PARTICIPANTS:

Martin A. Bauer, Director, South Platte River Basin Project, Missouri Basin Region, Federal Water Pollution Control Administration, Department of the Interior, Denver, Colorado

Robert W. Gardner, Assistant Regional Forester, United States Forest Service, Denver, Colorado

Joseph J. Slizeski, representing Colonel Harold J. St. Clair, Corps of Engineers, District Engineer, Omaha District, Omaha, Nebraska

Kaarlo W. Nasi, Sanitary Engineer Director, Associate Regional Health Director for Environmental Health, United States Public Health Service, Department of Health, Education, and Welfare, Region VIII, Denver, Colorado

Frank Rozich, Technical Secretary, Colorado State Department of Public Health, Water Pollution Control Commission, Denver, Colorado

OTHERS IN ATTENDANCE:

W. E. Anderson, United States Department of Agriculture, Denver, Colorado

James E. Arden, Federal Water Pollution Control Administration, CRBP, Denver, Colorado

Cesar P. Baez, Federal Water Pollution Control Administration, CRBP, Denver, Colorado

Francis Bennett, Federal Water Pollution Control Administration, CRBP, Denver, Colorado

Hugh E. Berger, United States Bureau of Public Roads, Denver, Colorado

Lester E. Blaschke, United States Public Health Service, Denver, Colorado

Carl V. Blomgren, Federal Water Pollution Control Administration, Missouri River Basin Region, Kansas City, Missouri

Robert H. Bordner, Federal Water Pollution Control Administration, SPRBP, Denver, Colorado

James W. Bowman, United States Bureau of Reclamation, Denver, Colorado

Robert Brennan, USGS, Denver, Colorado

John R. Burgeson, Federal Water Pollution Control Administration, Denver, Colorado

George G. Collins, Federal Water Pollution Control Administration, CRBP, Denver, Colorado

OTHERS IN ATTENDANCE (Continued):

James W. Crooks, Federal Water Pollution Control Administration, Washington, D. C.

John R. Fetters, United States Food and Drug Administration, Denver, Colorado

Garry L. Fisk, Federal Water Pollution Control Administration, Missouri River Basin, Kansas City, Missouri

L. Russell Freeman, Federal Water Pollution Control Administration, CRBP, Denver, Colorado

Robert W. Gardner, United States Forest Service, Denver, Colorado

Don Garry, United States Department of the Interior, Denver, Colorado

R. W. Gehan, United States Bureau of Mines, Denver, Colorado

John L. Gregg, Department of the Interior, BLM, Denver, Colorado

L. M. Grow, United States Atomic Energy Commission, Denver, Colorado

Robert D. Harp, Federal Water Pollution Control Administration, CRBP, Denver, Colorado

Marlin Helming, Federal Water Pollution Control Administration, Denver, Colorado

Jesse L. Honnold, Bureau of Reclamation, Denver, Colorado

OTHERS IN ATTENDANCE (Continued):

Charles W. Huntley, Bureau of Reclamation, Denver, Colorado

Lowell Keup, Federal Water Pollution Control Administration, Cincinnati, Ohio

F. W. Kittrell, Federal Water Pollution Control Administration, Cincinnati, Ohio

Rosanne Light, Federal Water Pollution Control Administration, Washington, D. C.

Harris R. McDonald, United States Bureau of Reclamation, Denver, Colorado

John McCormick, Bureau of Outdoor Recreation, Denver, Colorado

A. E. Metzler, Federal Water Pollution Control Administration, CRBP, Denver, Colorado

Cecile D. O'Rourke, River Basin Surveys, Denver, Colorado

Richard Sotiros, Federal Water Pollution Control Administration, CRBP, Denver, Colorado

Edmund J. Struzeski, Jr., Federal Water Pollution Control Administration, Denver, Colorado

John T. Talty, United States Public Health Service, Denver, Colorado

OTHERS IN ATTENDANCE (Continued):

Howard V. Lewis, Vice-Chairman, Colorado Water Pollution Control Commission, Golden, Colorado

Betty M. Chronic, Secretary, Colorado Water Pollution Control Commission, Boulder, Colorado

Dr. Norman A. Evans, Member, Colorado Water Pollution Control Commission, Fort Collins, Colorado

Edmond F. Gaobetti, Member, Colorado Water Pollution Control Commission, Pueblo, Colorado

Rear Admiral Joseph F. Jelley, Member, Colorado Water Pollution Control Commission, Colorado Springs, Colorado

Charles C. Nicola, Member, Colorado Water Pollution Control Commission, Denver, Colorado

Leo Sommerville, Member, Colorado Water Pollution Control Commission, Fruita, Colorado

Eugene L. Facetti, District Engineer, Colorado State Health Department, Denver, Colorado

David F. Foster, Legal Counsel, Colorado State Health Department, Denver, Colorado

Albert J. Klimaszewski, Health Educator, Colorado State Health Department, Denver, Colorado

Thomas I. Peabody, Denver Health Department, Denver, Colorado

Joseph E. Vigil, Tri-County Health Department, Aurora, Colorado

OTHERS IN ATTENDANCE (Continued):

Charles Hill, Colorado Air National Guard, Buckley Field, Colorado

William J. Adrian, Colorado Game, Fish and Parks Department, Ft. Collins, Colorado

Darrell A. Bingham, Colorado Game, Fish and Parks Department, Ft. Collins, Colorado

T. J. Longley, Colorado Water Conservation Board, Denver, Colorado

Louis L. Landers, American Smelting and Refining Company, Denver, Colorado

James H. Fischer, Beet Sugar Development Foundation, Ft. Collins, Colorado

Ralph Adkins, CF&I Steel Corporation, Pueblo, Colorado

Ed Pearson, CF&I Steel Corporation, Pueblo, Colorado

Craig S. Barnes, Colorado Assoc. Comm. & Industry, Denver, Colorado

Hinton J. Dillard, Continental Oil, Commerce City, Colorado

Clyde Hampton, Continental Oil, Commerce City, Colorado

Kenneth L. Thorp, Denver Chamber of Commerce, Denver, Colorado

OTHERS IN ATTENDANCE (Continued):

C. N. Feast, Denver Water Board, Denver, Colorado

Alvin H. Voight, Jr., Dow Chemical Company, Golden, Colorado

Lloyd T. Jensen, Great Western Sugar Company, Denver, Colorado

Richard J. Spelts, Ireland, Stapleton, Pryor & Holmes, Denver, Colorado

Boris S. Voukovitch, Metro Denver Sewage Disposal District, Commerce City, Colorado

W. S. Landers, Public Service Company of Colorado, Denver, Colorado

Ken Monroe, Rocky Mountain Oil and Gas Association, Denver, Colorado

Walter Lackemann, Tenneco Oil Company, Denver, Colorado

James C. Gilliland, University of Colorado Medical Center, Denver, Colorado

R. Franklin Erismar, University of Denver Law School, Denver, Colorado

Bill Slifer, Watersaver Company, Inc., Denver, Colorado

Paul Hyde, Watersaver Company, Inc., Denver, Colorado

OTHERS IN ATTENDANCE (Continued):

Margaret Chenoweth, Bailey Woman's Club, Bailey, Colorado

Florence E. Miller, Bailey Woman's Club, Bailey, Colorado

Mrs. F. R. Anderson, Colorado Clean Streams Commission, Arvada, Colorado

Lucille L. Beck, Colorado Clean Streams Commission, Denver, Colorado

Ruth H. Newlon, Colorado Federation of Women's Clubs, Denver, Colorado

Mrs. F. G. Martinez, League of Women Voters, Wellington, Colorado

Mrs. Elmer Merz, Izaak Walton League and Clean Streams, Denver, Colorado

Josephine M. Garrett, League of Women Voters, Denver, Colorado

Helen Richardson, League of Women Voters, Denver, Colorado

Ramona D. Shedroff, League of Women Voters, Denver, Colorado

Mildred W. Tasberg, League of Women Voters, Denver, Colorado

Mrs. Earl C. Wilson, League of Women Voters. Evergreen, Colorado

Miss Doris M. Wells, League of Women Voters,

OTHERS IN ATTENDANCE (Continued):

Englewood, Colorado

Mrs. Jess Fitzsimmons, Republican Women's Club, Shawnee, Colorado

Mrs. Chester W. Rose, Woman's Club of Denver, Denver, Colorado

E. A. Dady, Denver, Colorado

J. B. Fitzsimmons, Rancher, Shawnee, Colorado

Ronald J. Van Mersbergon, Sanitary Engineer, Denver, Colorado

Karen W. Porter, Denver, Colorado

David Shedroff, Denver, Colorado

PROCEEDINGS

OPENING STATEMENT
BY
MR. MURRAY STEIN

MR. STEIN: The conference is open.

This session of the conference in the matter of pollution of the navigable waters of the South Platte River Basin within the State of Colorado is being held under the provisions of Section 10 of the Federal Water Pollution Control Act, as amended. The Secretary of the Interior is authorized to call a conference of this type when requested to do so by the Governor of a State. Governor Love requested a conference on July 18, 1963, and conference sessions have been held on October 29, 1963, and April 27-28, 1966.

The purpose of the conference is to bring together representatives of the State water pollution control agency, representatives of the Federal Water Pollution Control Administration, and other interested parties, to review the existing situation, the progress which has been made, to lay a basis for future action by all parties concerned, and to give the State, localities and industries an opportunity to take any indicated remedial action under State and local law.

The conference technique is rather an old one. It is used by many States informally in the normal conduct of their business in the field of water pollution control. The concept of the conference was proposed by the United States Supreme Court as long ago as 1921 in the famous case of New York against New Jersey involving interstate pollution. I would like to quote briefly from the Court's opinion:

> "We cannot withhold the suggestion, inspired by the consideration of this case, that the grave problem of sewage disposal presented by the large and growing population living on the shores of New York Bay is one more readily to be most wisely solved by cooperative study and by conference and mutual concession on the part of representatives of the States so vitally interested in it than by proceedings in any court however constituted."

We strorgly support the conference technique and we measure our success by the situations which are solved at the conference table rather than in court.

I might say for me the experience in Colorado has been one of the best in my twenty-five years of State-Federal relations. We were called in by the Governor. We worked, I think, in the most cooperative way with the State and State officials.

There were natural differences, largely from points of view and where we came from, and how we looked at a problem, and the statutory responsibilities attached. However, these points of view were matched in one way or another and approached in an entirely professional way. We, I think, have arrived, and I hope we will arrive, at an amicable solution.

In the matter of State-Federal relations, we are not very sure whether either of us could have arrived at this solution alone. I am sure it would not have been the same one that we are going toward. Probably two and a half years ago, when we started, neither of us would have admitted that there were any good points in the other one's viewpoint, but I suspect, after the two and a half years have passed, the solution we may be coming towards may be a lot better than either the Federal or the State government could have accomplished alone.

As specified in Section 10 of the Federal Water

Pollution Control Act, the official water pollution control agencies of Colorado have been notified of this conference. Colorado is being represented by Mr. Richard T. Eckles of the Colorado Water Pollution Control Commission and Dr. Roy Cleere of the Colorado State Department of Health.

Those of you from Colorado will recognize there are no two stronger proponents and advocates and workers for clean water than the two Colorado conferees.

The Federal conferee is Mr. Herbert C. Clare, who is Program Director for this region of the Federal Water Pollution Control Administration, with headquarters in Kansas City, Missouri.

My name is Murray Stein and I am from headquarters of the Federal Water Pollution Control Administration in Washington, D. C., and the representative of Secretary Udall.

This conference is between the official State pollution control agencies and the Federal Water Pollution Control Administration. The representatives of the official agencies may bring whomever they wish to the conference and have them participate in the conference. However, only the representatives of the official State agencies and the Federal Water Pollution Control Administration constitute the conferees.

Both the State and Federal governments have responsibilities in dealing with water pollution control problems. The Federal Water Pollution Control Act declares that the States have primary rights and responsibilities for taking action to abate and control pollution. Consistent with this, we are charged by law to encourage the States in these activities.

At the same time, the Secretary of the Interior is charged by law with specific responsibilities in the field of water pollution control in connection with pollution of interstate and navigable waters. The Federal Water Pollution Control Act provides that pollution of interstate or navigable waters, whether the matter causing or contributing to the pollution is discharged directly into such waters, or reaches such waters after discharge into a tributary, which endangers the health or welfare of any person, shall be subject to abatement.

The first session of this conference was held October 29, 1963. The conference was called on the basis of a request from Governor John A. Love. At the first session the conferees agreed, among other things, that the Federal pollution control authorities, in cooperation with the State pollution control agency, would initiate a joint investigation and study. The purpose of the study was to attempt to locate with particularity the sources of pollution having an adverse effect upon water quality; determine the physical, chemical and biological responses of the river to pollution; evaluate the previously located sources of pollution with respect to conditions in the river; compute waste load reductions necessary to obtain desired water quality; and recommend water quality control measures needed to effect the desired waste load reduction. Subsequent to the conference a resident study group was established to provide technical assistance for this investigation.

On April 27-28, 1966, the second session of the conference was held on pollution of the South Platte River, to consider the results obtained from this investigation and study and to determine action to be taken to abate pollution from the sources that had been studied. The South Platte River Basin Project presented a report to the conferees which contained both general and specific recommendations for remedial action. This recommended remedial program concerns municipal and industrial wastes in the Denver metropolitan area, feedlot wastes, and sugar beet processing mills wastes, among others.

Shortly before the second session of the conference, held April 27-28, 1966, the Colorado State Water Pollution Control Commission was established by State law, and the first meeting of the Commission was held in conjunction with the April conference session. In view of this, the conferees agreed to meet again at a later date to allow the new Commission sufficient time to study and evaluate the Federal report, and develop a program for implementation of remedial measures and a time schedule. Accordingly, the second session of the conference is reconvened today for the purpose of considering a program of remedial action and time schedules for pollution abatement in the South Platte River Basin.

Now a word about the procedures governing the conduct of the conference. The conferees will be called upon to make statements. The conferees, in addition, may call upon participants whom they have invited to the conference to make statements. At the conclusion of each statement, the conferees will be given an opportunity to comment or ask questions, and at the conclusion of the conferees' comments or questions I may ask a question or two. This procedure has proven effective in the past in developing a clear statement of the problem and in reaching equitable solutions.

At the end of all the statements we will have a discussion among the conferees, and probably retire into executive session. At that time we will announce the time when we will reappear and hopefully be able to make an announcement.

Under the Federal law, the Secretary of the Interior is required at the conclusion of the conference to prepare a summary of it, which will be sent to all the conferees. The summary, according to law, must include the following points:

1. Occurrence of pollution in navigable waters subject to abatement under the Federal Act;
2. Adequacy of measures taken toward abatement of pollution; and,
3. Nature of delays, if any, being encountered in abating the pollution.

The Secretary of the Interior is also required to make recommendations for remedial action, if such recommendations are indicated.

I might say that when the Federal and State conferees have agreed unanimously on these recommendations, the Federal Cabinet officer responsible for making of these recommendations has in the past always endorsed them.

A record and verbatim transcript will be made of the conference by Al Zimmer. He is making this transcript for the purpose of aiding us in preparing a summary, and also providing a complete record of what is said here. We will make copies of the summary and transcript available to the

State agencies.

We have found that, generally, for the purpose of maintaining relations with the industries and municipalities within a State, we would hope that you would go to the State agency rather than to the Federal Government. The reason for this is that when the conference has been concluded, we would prefer that the people who are interested in the problem follow their normal relations in dealing with the State government, rather than the Federal Government, on these matters. This has worked successfully in the past, and we will be most pleased to make this material available to the State for distribution.

On a note of optimism, I hope this will be the last formal conference we will have to have on the South Platte. The sooner we get working with the State people, I think the better off we will be.

I would suggest that all speakers and participants making statements other than the conferees, come to the lectern and identify themselves for the purpose of the record.

I do think that the South Platte River has been studied and analyzed as few rivers in the country now have been. This has been one of the advantages of this action. I think we have a leg up on many, many other rivers.

The facts are available. You have a perceptive and hard-working State board. I think that that is good for an action program to clean up the river, and I am sure that you will hear that much of this is already under way, so we are moving ahead.

Before we start, we have my boss here, and a distinguished visitor, Assistant Secretary Di Luzio of the Department of the Interior.

Would you stand, up, sir?

People have said we have become big business now. We have gotten, as the people who know the new law are aware, authorizations for much more money than we ever thought we were going to get in this field. We also have an Assistant Secretary in the Department of the Interior devoted to water pollution control, which insures us a direct and rapid entree to the Secretary of the Department on any problem we may have. This has proved very effective for our kind of work.

We are very happy to have Mr. Di Luzio here. I think this will give the new emphasis, or is one of the best examples of the new emphasis we are having on this, that the Assistant Secretary would come down and sit in and see what happens at one of these conferences.

With that, I would like to call on Mr. Herbert

Clare for the Federal presentation.

Mr. Clare?

STATEMENT OF HERBERT C. CLARE, CONFEREE AND REGIONAL DIRECTOR, MISSOURI RIVER BASIN PROJECT, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, DEPARTMENT OF THE INTERIOR

MR. CLARE: Thank you, Mr. Chairman.

I see, Murray, like most of us on occasions, is a victim of habit. He introduced me as the Regional Program Director, which I was before we went into Interior. At the present time, I am the Regional Director for the Federal Water Pollution Control Administration in the Missouri Basin Region.

I am glad to be here. Sitting in this chair on previous occasions has been Lester Klashman, who has been transferred to a position similar to mine in the Northeast Region.

I don't think there is much that I can add to the very comprehensive statement that our chairman has made about this conference and the work that has been done on the South Platte by the Federal Water Pollution Control Administration and the State of Colorado.

H. C. Clare

I want you to know that we feel in the Missouri Basin that the South Platte is a very important part of the Basin, and I know that you people in Colorado really realize it is a very important part of Colorado.

It is my personal opinion that when Governor Love asked that this work be done on the South Platte Basin, he knew, or at least sensed, the public opinion or the public support that is being given to our program and your program in the State, I am sure, for clean waters -- that is, keeping clean waters clean and making foul waters cleaner.

I don't think there is anything more that I need to say in the way of an introductory statement.

There are representatives here of Federal agencies whom I should like to introduce.

Mr. James Crooks is here, of our headquarters office, Comprehensive Programs Branch.

Jim, do you want to stand up so that they will know where you are?

The next one, I am sure, does not need an introduction to many of you. Garry Fisk is Deputy Regional Director for the Missouri Basin Region, and we are glad to have Garry in our Kansas City headquarters office.

Carl Blomgren is here also from the Missouri

Basin Region. Carl heads up the enforcement program for the Federal Water Pollution Control Administration in the Missouri Basin.

Some of the other Federal representatives who are here for other agencies I should like to introduce at this time, and later on we will call on those who have indicated that they would like to make statements. I will call them later for those statements.

Mr. Robert W. Gardner from the Department of Agriculture. Is Mr. Gardner here?

MR. GARDNER: Yes.

MR. CLARE: Thank you.

Mr. Gardner is the Assistant Regional Forester, and I suppose you are representing Mr. Nordwall, your Regional Forester, as well as your office.

We have Mr. Joseph Slizeski of the Corps of Engineers. We are glad to have you here. I presume you are representing Colonel St. Clair of the District Office, and Colonel Love of the Division Office of the Corps of Engineers.

MR. SLIZESKI: Right.

MR. CLARE: Representing the Department of Health, Education, and Welfare, Public Health Service, we have Mr. Kaarlo Nasi. I am sure he needs no introduction in this area. We will call on you later, Kaarlo.

Now, representing the Bureau of Outdoor Recreation, is Mr. E. E. Allen here? He is the Regional Director. Or is there anyone representing him?

MR. McCORMICK: I am here from Mr. Allen's office.

MR. CLARE: What is your name?

MR. McCORMICK: John McCormick.

MR. CLARE: Thank you.

Next, the Department of Commerce, Bureau of **Public Roads**. We heard from Mr. Charles D. Beach, who is the Regional Engineer, and also from Mr. A. R. Abelard, who is the Division Engineer for Colorado. Is either of these gentlemen here?

MR. BERGER: I am representing Mr. Beach.

MR. CLARE: What is your name?

MR. BERGER: Hugh Berger.

MR. CLARE: Hugh Berger. Thank you.

The United States Geological Survey is next. We heard from Mr. S. Keith Jackson, who is the Regional Hydrologist, that Mr. Robert Brennan would be here. Is Mr. Brennan present?

MR. BRENNAN: Yes.

MR. CLARE: Thank you, Mr. Brennan.

The Bureau of Reclamation. Mr. H. Pat Dugan, who is the Regional Director, indicated that Mr. James W.

Bowman would represent him. Is Mr. Bowman here?

MR. BOWMAN: Yes.

MR. CLARE: We are glad to have you.

The Bureau of Land Management. Mr. E. I. Rowland. Is he here, or his representative?

MR. GREGG: I am John Gregg.

MR. CLARE: Thank you.

Next is the Office of the Solicitor for the Department of the Interior. Representing the Regional Solicitor, Palmer King, is Mr. Don A. Young.

Mr. Young, we are glad you are with us.

Now, I believe that finishes the introduction of Federal representatives. If I have missed anyone, would he please stand up?

Yes, I see the Bureau of Mines over here.

MR. GEHAN: Robert Gehan.

MR. CLARE: Mr. Robert Gehan.

Are there any others?

(No response.)

MR. CLARE: We would like to start off by reviewing some of the recommendations that were made in preceding sessions of this conference.

As the chairman indicated, the previous sessions were held, the first session in October of 1963, and the last one last April.

Before we start that, Mr. Bud Bauer, who will make this review for us, has suggested that I review with you some of the technical terms that will be used by him, and, I am sure, by other speakers today.

Many of you may have this sheet defining certain technical terms that will be used, but it isn't very long, and let me read it to be sure that each of you have some idea of what they are.

Biochemical oxygen demand is abbreviated as BOD and is analyzed as five-day, and 20°C BOD is a measure of the oxygen demand of sewage and industrial wastes. BOD in the stream is a measure of oxygen used by living organisms in decomposing these wastes.

Total suspended solids, referred to as TSS, are solids found in waste water or in the stream which can be removed by filtration. The origin of suspended matter may be man-made wastes or natural sources such as silt from erosion.

Population equivalents, often referred to as P.E., describe the pollutional effect of various waste discharges in terms of a corresponding effect of discharging raw sewage from an equivalent number of human population. Each P.E. represents the waste contributed by one person in a single day.

Total coliform bacteria represent a diverse group of microorganisms whose presence have been used as indication of sewage pollution in water supplies. They are always present in the intestinal tract of man and other warm-blooded animals and are excreted in large numbers in fecal wastes. It must be noted that under some circumstances, coliform bacteria may be present which are derived from sources other than fecal excreta.

Fecal coliform bacteria eliminate coliforms derived from sources other than the gut of warm-blooded animals. Enumeration of this group yields an index for that portion of the coliform group which is of fecal origin. As the numbers of fecal coliform increase, the relative probability of hazard from enteric diseases increases.

In order that we may have ourselves refreshed as to the recommendations which were presented at the second session of the conference, I would like to call on Martin A. Bauer, who is in charge, and has been in charge of the study which has been made on the South Platte River by the State and the Federal Water Pollution Control Administration.

Mr. Bauer.

MR. STEIN: Thank you, Mr. Clare.

I know that the people of Colorado voted overwhelmingly for Daylight Savings Time, but I did not think it would take with a vengeance. The clock is right on Daylight Savings Time now.

(Laughter.)

Mr. Bauer.

STATEMENT OF MARTIN A. BAUER, DIRECTOR, SOUTH PLATTE RIVER BASIN PROJECT, MISSOURI BASIN REGION, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, DEPARTMENT OF THE INTERIOR, DENVER, COLORADO

MR. BAUER: Thank you, Mr. Clare.

Secretary Di Luzio, Mr. Chairman, conferees, ladies and gentlemen:

The Second Session of the Conference in the Matter of Pollution of the South Platte River Basin in Colorado was held in Denver on April 27-28, 1966. The technical report presented to the conferees by the Federal Water Pollution Control Administration's South Platte River Basin Project contains both general and specific recommendations for pollution abatement action, including appropriate time schedules for all major waste sources in the Denver metropolitan area and for feedlot operations and the sugar

M. A. Bauer

beet industry in the remainder of the Basin.

Certain water quality objectives were recommended at the April 1966 conference as necessary to protect all present and future beneficial uses. These beneficial uses include municipal water supply, recreation, propagation of fish and aquatic life, agriculture, industrial water supply, esthetics, and other legitimate needs.

The water quality objectives recommended by the South Platte River Basin Project are as follows:

1. In the main-stem South Platte River from just above the City of Littleton to the discharge of Metropolitan Denver Sewage Disposal District No. 1 treatment facility; in Bear Creek from the Town of Evergreen to its mouth; and in Cherry Creek from Cherry Creek Reservoir to its mouth --
    a. The dissolved oxygen (DO) content be maintained at not less than 5 mg/1;
    b. The 5-day, 20°C Biochemical Oxygen Demand (BOD) level not be allowed to exceed 10 mg/1; and
    c. The total and fecal coliform levels not be allowed to exceed 2,400 and 500 bacteria per 100 ml, respectively.

2. In the main-stem South Platte River from just below the discharge of Metro-District treatment facilities to just above the discharge from the Great Western Sugar Company in the City of Brighton; all of Sand Creek, in Clear Creek from the City of Golden to its mouth --
    a. The dissolved oxygen (DO) content be maintained at not less than 4 mg/l;
    b. The 5-day, 20°C BOD level not be allowed to exceed 20 mg/l; and
    c. The total and fecal coliform levels not be allowed to exceed 5,000 and 1,000 bacteria per 100 ml, respectively.
3. In the main-stem South Platte River from just below the discharge from the Great Western Sugar Company mill in the City of Brighton to the Colorado-Nebraska State Line; in the St. Vrain Creek from Longmont to its mouth; in the Big Thompson River from Loveland to its mouth; in the Little Thompson River from Johnstown to the stream mouth; and in the Cache la Poudre River from Windsor to the stream mouth --
    a. The dissolved oxygen (DO) content be maintained at not less than 4 mg/l;

b. The 5-day, 20°C BOD level not be allowed to exceed 15 mg/1; and

c. The total and fecal coliform levels not be allowed to exceed 5,000 and 1,000 bacteria per 100 ml, respectively.

Specific recommendations and time schedules have been developed for individual sources of waste in the Denver metropolitan area and in the Middle and Lower Basin areas for feedlot operations and the beet sugar industry. These recommendations are as follows:

I. Denver Metropolitan Area

To insure that the water quality objectives are met and effective reduction in present levels of pollution are obtained, it will be necessary to provide adequate treatment for all wastes discharged to Basin streams in the Denver metropolitan area and to provide a high degree of operating efficiency in the waste treatment processes. Adequate treatment is defined as that which will:

1. Remove at least 90 percent of the Biochemical Oxygen Demand (BOD) and total suspended solids (TSS) and all of the settleable solids.
2. Provide continuous disinfection for all organic

effluents released by municipal and industrial waste treatment plants.

3. Remove essentially all toxic materials.
4. Permit no discharge of phenol-like substances in concentrations greater than 25 parts per billion.
5. Permit no visible floating oil or grease in the streams.

A. Specific Recommendations for:

Municipal Waste Treatment

1. The following plats shall divert all sewage to the Metropolitan Denver Sewage Disposal District No. 1 on or before January 1, 1967:
   a. City of Arvada
   b. Baker Sanitation District
   c. Clear Creek Valley Sanitation District
   d. City of Denver (Northside)
   e. City of Denver (Eastside)
   f. Federal Correctional Institution
   g. Fruitdale Sanitation District
   h. North Washington Sanitation District
   i. N.W. Lakewood Sanitation District

M. A. Bauer

   j. City of Thornton
   k. City of Westminster
   l. City of Wheatridge

2. The following plants shall continue to provide adequate treatment for removal of BOD, settleable solids and bacteria and, in addition, provide for 90 percent removal of TSS of all sewage discharged to the Basin streams on or before January 1, 1967:

   a. City of Aurora (Sand)
   b. City of Brighton
   c. Fitzsimons Army Hospital
   d. South Adams Sanitation District

3. The following plants shall provide adequate treatment, including disinfection of all sewage discharged to Basin streams. Plans shall be submitted to the State Water Pollution Control Agency on or before January 1, 1967, and additional facilities shall be in operation before January 1, 1968:

   a. City of Aurora (Westerly)
   b. City of Evergreen
   c. City of Littleton

d. South Lakewood Sanitation District

4. The following plants shall provide adequate treatment, including disinfection of all sewage discharged to Basin streams, on or before January 1, 1967:

   a. Buckley Air Station

   b. City of Englewood

5. The City of Golden (the Adolph Coors Company) shall continue to provide adequate treatment for removal of BOD, settleable solids and TSS, and in addition provide for adequate disinfection of all sewage discharged to Basin streams on or before January 1, 1967.

6. The Metro District plant (presently under construction and to be in complete operation prior to January 1, 1967) shall provide at least 92 percent removal of BOD and total suspended solids and remove all of the settleable solids in addition to other criteria for adequate treatment on or before January 1, 1967.

B. Specific Recommendations for:

Industrial Waste Treatment

M. A. Bauer

1. The following industries shall divert present waste discharges from the South Platte River to the sanitary sewer on or before January 1, 1967:
   - a. Armour & Company
   - b. Capitol Rendering Company
   - c. Chicago, Burlington & Quincy Railroad
   - d. Colorado and Southern Railroad
   - e. Denver & Rio Grande Western Railroad
   - f. Gates Rubber Company
   - g. Kuner Empson Company (Brighton)
   - h. Litvak Meat Company
   - i. United Fryer & Stillman, Inc.
   - j. Samsonite Corporation
2. The Colorado School of Mines Research Foundation, Inc., shall provide sufficient capacity for their retention pond to prevent overflow to Clear Creek on or before January 1, 1967.
3. The Coors Porcelain Company shall divert floor drain waste discharges from Clear Creek to the sanitary sewer on or before January 1, 1967.
4. The following industries shall provide

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adequate treatment to further reduce concentrations of phenol to Basin streams on or before June 1, 1967:

a. Continental Oil Company

b. Empire Petroleum Company

c. Tenneco Oil Company

In addition, the Continental Oil Company shall provide adequate treatment to remove chromium from their final waste discharges on or before June 1, 1967.

5. The Denver Union Stockyard Company shall alter present livestock drinking water overflow and pen drains to prevent discharge of livestock excreta and feed to the South Platte River on or before January 1, 1967.

6. The Gates Cyclo Poultry Farm shall provide adequate treatment, including disinfection prior to discharge to the South Platte River or any Basin waterway. Plans shall be submitted to the State Water Pollution Control Agency on or before January 1, 1967, and treatment facilities shall be in operation before January 1, 1968.

7. The Public Service Company of Colorado shall

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provide adequate treatment to obtain further reduction of TSS from the fly ash lagoon at the Zuni plant and in addition divert the overflow and backwash discharge from the softening process to the sanitary sewer on or before January 1, 1967.

8. The Stapleton International Airport shall divert present industrial waste discharges from Sand Creek to the sanitary sewer on or before January 1, 1967.

C. General Recommendations

1. All industrial and commercial establishments in the Denver metropolitan area presently discharging raw or inadequately treated wastes to Basin streams via storm sewers and miscellaneous outfalls and not specifically named in Part "B" of the Recommendations, be investigated by municipal, county, or State authorities and the wastes diverted to the sanitary sewers prior to January 1, 1967.
2. In those cases where concentrations of certain wastes, such as paunch contents,

grease, oil, and toxic materials are not acceptable to municipal sewage treatment plants, satisfactory in-plant treatment facilities shall be provided. Facilities for such in-plant treatment shall be in operation by January 1, 1967.

3. In those cases where use of the sanitary sewer system is considered to be unreasonable by the State Water Pollution Control Agency, adequate treatment of wastes must be provided. Plans shall be submitted to the State Water Pollution Control Agency on or before January 1, 1967, and the facilities placed in operation on or before January 1, 1968.

D. Other Recommendations

1. All waste settling ponds shall be provided with a seal of an impermeable material to prevent pollution of the valley-fill aquifer.
2. A ground-water monitoring program be established and carried out by the State and/or local health authorities in areas affected

by excessive nitrate and ABS.

3. An appropriate State Agency be empowered to approve or disapprove sources of supply and treatment facilities for municipal water systems.

4. All sources of public water supply be subject to effective disinfection by chlorination or other approved methods with provision for adequate detention and duplicate feeding devices.

5. An appropriate State Agency be empowered to approve or disapprove plans for municipal and industrial treatment facilities prior to construction.

6. The staffs of the appropriate State agencies be increased to provide the necessary supervision and technical advice for carrying out an effective water supply and pollution control program.

7. A program of surveillance of the Basin waters must be undertaken by the appropriate State agency to obtain the data required for constant evaluation and insure the highest possible benefits consistent

with future legitimate and beneficial water uses.

II. Feedlot Operations

To achieve an ultimate solution, feedlot operations should be relocated away from urban and suburban populations and streams; however, as an interim measure it is recommended that:

A. The four feedlots which pump or pipe waste drainage to the surface streams:

1. The Monfort Feedlot in Greeley
2. The Farr Farms Feedlot in Greeley
3. The Weisbart Feedlot in Brush
4. The Mancini Feedlot in Brighton

shall initiate plans to design and construct adequate treatment facilities such as the use of lined lagoons, or treat these wastes by equivalent means to prevent the pollution of both surface and groundwater resources.

B. The seven feedlots which have overland drainage to surface streams:

1. The Western Beef Feedlot in Denver
2. The Farr Farms Feedlot in Greeley
3. The Mancini Feedlot in Brighton

4. The National Food Company Feedlot in Brighton
5. The Mountain View Angus Ranch Feedlot in Platteville
6. The Ludlow Cattle Company Feedlot in Longmont
7. The Tittle Feedlot north of Greeley

shall initiate plans to design and construct berms or suitable drainage facilities to divert the surface runoff to lined lagoons or treat these wastes by equivalent means to protect against the pollution of both surface and ground waters.

C. Waste abatement requirements for these nine feedlots are to be developed before January 1, 1967, by the State Water Pollution Control Agency. Necessary feedlot waste handling and treatment facilities shall be constructed before January 1, 1968.

D. All feedlots in the South Platte River Basin shall initiate a program for frequent removal of manure and other waste material in the feedlots. Efforts shall be made by the industry to reduce odor to a minimum. The feedlot program shall be regulated by the State Water Pollution Control Agency.

III. Sugar Beet Processing Mills

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It is recommended that:

A. The sugar beet industry provide treatment of wastes so that the total 5-day BOD load discharged in any given day in the total effluents entering Basin streams or waterways shall not exceed the following values for the respective plants. Residual wastes may be discharged over an extended period of the year, if necessary.

Brighton	--	1100 pounds
Longmont	--	1450 pounds
Loveland	--	1750 pounds
Johnstown	--	800 pounds
Windsor	--	1100 pounds
Eaton	--	1000 pounds
Greeley	--	1100 pounds
Fort Morgan	--	3000 pounds
Sterling	--	2200 pounds
Ovid	--	2800 pounds

B. There be no settleable solids contained in the total effluents, and that suspended solids loads in these effluents not exceed the numerical levels prescribed above for 5-day BOD.

C. Disinfection be provided for each waste discharge so that the receiving stream or waterway directly below each mill shall not show an increase of more than 5,000 total coliform bacteria per 100 ml, and 1,000 fecal coliform per 100 ml, over the corresponding densities upstream of the mill discharge.

D. Dissolved oxygen in tne treated waste effluents not be less than 2 milligrams per liter at any time to insure minimum dissolved oxygen concentrations of 4.0 mg/1 in the receiving streams or waterways.

E. There be absence of grease, oil, floating solids, slime, or sludge banks in the receiving streams, or waterways, as a result of waste discharges from the sugar beet mill.

F. Waste treatment and control measures and other procedures shall not cause pollution of the underlying valley-fill aquifers.

G. There be no disagreeable odors or other nuisance in the areas outside of, and immediately adjacent to, the plant sites.

H. Each sugar beet mill shall conduct continuous monitoring of the quality of final waste effluents and of each receiving stream above and below the points of waste discharge to these streams. Adequate records shall be maintained by each plant on water quality and shall be reported regularly to the State Water Pollution Control Agency.

I. The waste abatement measures given above for the sugar beet industry in the South Platte River Basin shall be completed by September 30, 1968, to provide full capacity for total plant wastes in the 1968-69 campaign and all subsequent campaigns.

J. Final approval of design plans on all waste treatment and control measures, inspections during and following construction of facilities, and final joint evaluation (together with the industry) of waste treatment and control performance shall be provided by the State Water Pollution Control Agency.

IV. Flow Augmentation for Water Quality Control

Under present water use patterns, streamflows will not be sufficient at all times to guarantee adequate water quality for all beneficial uses, even with the recommended waste treatment and pollution abatement program in effect. In other words, where streamflow is not augmented, adequate waste treatment may not provide satisfactory water quality.

In order to prevent crises in the future by assuring that waters of the South Platte River Basin meet the water quality objectives necessary to support all future beneficial and legitimate water uses, it is recommended that the State Water Pollution Control Agency develop, in the near future, a Water Resource Management Plan. This Water Resource Management Plan should include control over, and regulation of, the water system, as well as the wastes discharged into it, and may best be developed in close cooperation and coordination with the various Federal and State agencies that are concerned with water quantity and quality management practices.

Mr. Chairman, this concludes the Project statement.

MR. STEIN: Are there any comments or questions?

(No response.)

MR. STEIN: If not, thank you very much, Mr. Bauer.

Mr. Clare?

MR. CLARE: Before I introduce the next Federal representative for a statement, I would like to introduce some more Federal representatives here in the audience. Evidently they were bashful.

I see Mr. Frank W. Kittrell here from the Sanitary Engineering Center. Mr. Kittrell is the Chief of our Technical Services Program at the Center.

Also, Mr. Lowell Keup I think is here from the Center.

We also have Mr. L. M. Grow from the Atomic Energy Commission, and Mr. John R. Fetters from the Food and Drug Administration.

We have two more from Agriculture, Cecile D. O'Rourke from the Soil Conservation Service. We are glad to have you with us.

And we have W. E. Anderson from the River Basin Division.

Thank you.

Next we will hear from Mr. Robert W. Gardner, who is the Assistant Regional Forester with the Division of Watershed Management here in Denver.

STATEMENT OF ROBERT W. GARDNER, ASSISTANT REGIONAL FORESTER, UNITED STATES FOREST SERVICE, DENVER, COLORADO

MR. GARDNER: Mr. Chairman, ladies and gentlemen:

I am glad to have this chance to discuss water quality as it pertains to National Forest lands in Colorado in which the South Platte River rises.

Headquarters of the South Platte form principally in three National Forests -- the Roosevelt, Arapaho and Pike. The streamflow contribution from approximately 1,700,000 acres of National Forest land, or 14 percent of the area, is estimated at more than 80 percent of the total flow of the South Platte. Most of these lands are above 7,000 feet in the snowpack zone.

This proportion of total streamflow is not unusual as related to National Forests -- particularly in the West. This was, in fact, one of the primary reasons for establishment of the National Forests.

The Act of June 4, 1897, creating the forest reserves, cited "securing favorable conditions of water flows" as a principal purpose.

Because those "favorable conditions of water flow" include quantity and timing, in addition to quality, a great responsibility lies with the Forest Service in the use, management, and administration of these key lands.

Very basically, the Forest Service believes its place in the water yield picture is to provide for full production and efficient transmission of water from the time moisture hits National Forest lands, either as snow or rain, until it leaves the forest. It is our job, then, to deliver you the raw material in as great a quantity as possible, without sacrificing needed quality.

R. W. Gardner

In accepting this responsibility, we have developed four basic Forest Service policies related to water quality:

1. Ensure that return flows, particularly those associated with recreation and other domestic use, do not impair streamflow for other purposes the water is expected to serve.
2. Make certain that National Forest land management practices are conducted in a manner which will ensure a quality of water yield suitable for its intended purposes.
3. Maintain a water quality satisfactory for other National Forest resource uses, such as livestock and wildlife-watering and fish habitat, whenever it is within the capability of the Forest Service to do so.
4. Ensure a biologically safe and otherwise suitable supply of drinking water for the use of the public.

Compliance with these guidelines is no simple task. About 21 percent of the gross area within National Forest boundaries of the South Platte is held in private ownership. We have no jurisdiction over these private lands. A large proportion of this private land is located along major stream bottoms, constituting a potential pollution source over which the Forest Service has no control.

About two-thirds of the area within the Forests are of granitic origin soils -- they are highly erosive. This requires particular care in resource management to minimize stream sedimentation.

And, while water production is the prime factor in any land management decision, other resource uses of these lands are, and must be, made. Timber is harvested, cattle and sheep graze the slopes, recreationists make year-round visits, and wildlife, large and small, makes its home there.

Under contract to commercial timber operators, there were 18 million board feet of timber cut in 1965 in the National Forest of the South Platte drainage. Contracts awarded to highest bidders include numerous clauses, many of which are directed toward prevention of stream sedimentation and other pollution. These timber sales are closely supervised by the District Forest Ranger and members of his staff. While a few small sawmills are situated on National Forest lands, this practice is uncommon. Most logs are hauled to sawmills in nearby communities.

Silvicultural, or regeneration requirements of Engelmann spruce and lodgepole pine, our principal commercial species, generally require cutting in patches. We believe managed timber harvesting contributes very little to stream sedimentation or other pollution. Where sufficient natural regeneration does not occur in the cut-over areas, they are satisfactorily stocked by planting.

Last year nearly 13,000 cattle and 10,000 sheep grazed the South Platte area under permit. Livestock numbers and season of use are regulated in accordance with the forage supply and the herds or bands allotted specific areas of use. Individual range management plans are prepared for each allotment designed to maintain and improve watershed and forage conditions. One objective of the plan is to prescribe practices which increase livestock distribution and minimize concentrations in stream bottoms. We continue to have some problems, but range management practices are continually being improved.

As it is throughout the United States, outdoor recreation use is rapidly increasing in the South Platte. Some 4-½ million recreation visits were made in 1965. Although our recreation facility development has been accelerated, we still have a difficult time keeping pace with demand.

All sanitation facilities in developed camp and picnic areas accessible by road are now of the vault type. Sewage is pumped out under contract to commercial disposal companies. Sewage disposal from pickup campers and trailers continues to be a problem. Camp and picnic grounds with disposal facilities for trailer use are being developed in areas of heavy concentration. Use in undeveloped areas is checked as much as possible by recreation aids. Where a specific pollution hazard is found to exist, the area is posted.

Loggers, stockgrowers, and recreationists are not the only users of the South Platte Forests. A great number of major resource development projects in the South Platte area have just been completed, are under construction, or are planned by other Federal agencies or private companies. To mention a few: The Urad Mine development in Woods Creek; the Public Service Company's Cabin Creek development above Georgetown; Interstate Highway in Clear Creek Canyon and Straight Creek tunnel; the Malta-Waterton primary transmission line of the Public Service Company of Colorado; and the proposed Two Forks reservoir.

Before such projects are constructed, the Forest Service makes an intensive survey of the impact on forest resources, including water quality. From this analysis, stipulations are written and included in the permit or agreement.

During construction a Forest Service liaison officer is assigned to the project to see that the stipulations are carried out, and to make on-the-ground decisions as may be needed. Although the construction agencies and companies are most cooperative, it is impossible to construct developments of this magnitude without some adverse effect on stream quality. Such adverse effects are generally temporary.

National Forests are subject to natural catastrophes, such as fires and floods, which may have a serious effect on water quality. Local high intensity flood-producing storms are not infrequent in our high watersheds. Forest fires caused by man or lightning may denude large areas in a few hours, leaving the soil unprotected from rainstorms. When fires occur, technicians are immediately assigned to the task of determining rehabilitation requirements and costs, and they often begin such work before the fire is completely under control. Emergency funds are usually available and reseeding is done immediately to hold the soil. There is always risk, however, that a heavy rainstorm will occur before ground cover is established, and wash the loose ash and soil into streams.

This has been a very brief and far from complete sketch of our objectives, policies, resource uses, and management activities as related to water quality. It should be recognized that while our objectives are to maintain water of a high quality in the National Forest watersheds, the quality level must be somewhat less than that of pristine purity.

We believe that with careful management, the development and use of these natural resources which are essential to Colorado's economy can be continued and expanded, and still result in an acceptable standard of water quality.

In closing, I wish to emphasize that we will be happy to work with the conferees in any way we can.

Thank you.

MR. STEIN: Thank you, Mr. Gardner, for a truly comprehensive statement.

Are there any comments or questions?

(No response.)

MR. STEIN: If not, thank you very much again, Mr. Gardner.

We welcome the Forest Service to the team of clean water. That is the best statement and fullest statement I have heard from the Forest Service since we started in this business. Wonderful!

Mr. Clare?

MR. CLARE: The next presentation will be by Joseph J. Slizeski of the United States Army Engineers.

STATEMENT OF JOSEPH J. SLIZESKI, ON BEHALF
OF THE DEPARTMENT OF THE ARMY, OMAHA DISTRICT
CORPS OF ENGINEERS, OMAHA, NEBRASKA

MR. SLIZESKI: Mr. Chairman, ladies and gentlemen:

I am authorized to present the following statement in behalf of the District Engineer, United States Army Engineer District, Omaha, Nebraska. This is in the form of a letter addressed to the Chairman of the Conference, as follows:

> "Your letter of 25 October 1966 invited a statement from the Corps of Engineers at the Conference on Pollution of the South Platte River in Denver on 10 November 1966. We have studied your report on this matter, published on 27 April 1966, in connection with our planning responsibilities in flood control and water resources development in this basin. We have noted your recommendations for low-flow augmentation on the South Platte River, St. Vrain Creek, the Big Thompson River, and the Cache la Poudre River.

J. J. Slizeski

"We recognize that, historically, minimum stream flows have fallen below the recommended minimums of 25 c.f.s. on the South Platte River and 15 c.f.s. on the St. Vrain, Big Thompson, and Cache la Poudre Rivers.

"Our investigations in this basin are directed toward potential solutions of the flood and related water resources problems of the basin. In this connection, we have studied the streamflow regimen and the existing patterns of water management and economic utilization. We have concluded from these studies that the water resources of the basin are fully appropriated to existing economic uses under established water rights.

"We have also investigated the potential for improvements capable of conserving the runoff volume of occasional floods. We conclude from these studies that the incidence of such runoff volume in quantities sufficient to augment water supply has a statistical frequency which is incapable of assuring any increase in firm annual yields. Consequently, we consider that provisions for low-flow augmentations are possible only by modification of the prevailing patterns of water management and economic "use. However, since the administration of water rights is a function of the State, we have no basis for planning in this category.

"In view of these circumstances, we are unable to propose improvements to implement your recommendations for low-flow augmentation which could be pursued within the purview of our authority.

"Sincerely yours,
/s/ Harold J. St. Clair
Colonel, Corps of Engineers
District Engineer"

MR. STEIN: Thank you.

Are there any comments or questions?

(No response.)

MR. STEIN: If not, thank you very much.

MR. CLARE: I would like now to hear from Kaarlo W. Nasi, the Associate Regional Health Officer for Environmental Health, Public Health Service, Department of Health, Education, and Welfare.

STATEMENT OF KAARLO W. NASI, SANITARY ENGINEER DIRECTOR, ASSOCIATE REGIONAL HEALTH DIRECTOR FOR ENVIRONMENTAL HEALTH, UNITED STATES PUBLIC HEALTH SERVICE, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,

K. W. Nasi

REGION VIII, DENVER, COLORADO

MR. NASI: Mr. Chairman, conferees, ladies and gentlemen:

I appreciate the opportunity afforded for our attendance to this conference. We are very pleased to attend.

I have no formal or technical statement to make. However, I would like to note for the record of the conference our present interest in the proceedings.

As has been alluded to by the Chairman and by the Federal conferee, the United States Public Health Service in the Department of Health, Education, and Welfare, had previously had a very active role in the proceedings, but under the development related to Congressional action and Presidential reorganization, we presently are among the other agencies, such as the Department of Agriculture, as cooperators in this enterprise.

The United States Department of Health, Education and Welfare, however, continues to have a very strong program interest in water pollution control. Specifically, this interest has been specified in the Water Quality Act of 1965, and has been further delineated recently in the interdepartmental agreement effected recently and signed by the President on September 1, 1966.

This interdepartmental agreement specifically provides for consultation between the Department of Health, Education, and Welfare and the Department of the Interior regarding the health aspects of water pollution control. If desired, gentlemen, I would be very pleased to submit a copy of this interdepartmental agreement for the record.

In summary, therefore, I would like to say that the Public Health Service is interested in the proceedings, and, under the agreement I have mentioned, will work with the Department of the Interior and the Colorado State Department of Health on the health aspects of the problem and program.

MR. STEIN: Thank you, Mr. Nasi. Are there any comments or questions?

MR. CLARE: Mr. Chairman, I would like to suggest that Mr. Nasi give us a copy of the agreement and insert it in the record.

MR. STEIN: We would be happy to place that agreement in the record.

(The document referred to is as follows:

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HEALTH ASPECTS OF WATER POLLUTION CONTROL

Interdepartmental Agreement Concerning Consultation Between Department of Health, Education, and Welfare and the Interior, September 2, 1966.

1. This Interdepartmental Agreement has been developed in accordance with the provisions of Section 1(f) of Reorganization Plan No. 2 of 1966, which states:

"The functions of the Surgeon General under Section 2(k) of the Water Quality Act of 1965 (79 Stat. 905) are transferred to the Secretary of Health, Education, and Welfare. Within 90 days after this reorganization plan becomes effective, the Secretary of the Interior and the Secretary of Health, Education, and Welfare shall present to the President for his approval an interdepartmental agreement providing in detail for the implementation of the consultations provided for by said Section 2(k). Such interdepartmental agreement may be modified from time to time by the two Secretaries with the approval of the President."

2. The functions referred to above are defined by Section 2(k) of the Water Quality Act of 1965, as follows:

"The Surgeon General shall be consulted by the head of the Administration on the public health aspects relating to water pollution over which the head of such Administration has administrative responsibility."

3. The public health aspects of water pollution relate to man's drinking water; to his contact with water in recreation and work; to the contamination of food sources, particularly shellfish; and to the breeding of specific insect vectors of disease. The health threat is of three types; (a) chemical -- both organic and inorganic contaminants, which can result in acute toxic or long-term chronic effects on humans; (b) biological -- microbiological contaminants and insect vectors associated with spread of communicable disease; and (c) radiological -- radioactive contaminants which in very low level concentrations may produce radiation damage in humans.

4. Consultation between the Departments of Health, Education, and Welfare and the Interior under the terms of this Agreement shall be based upon the following

general concept:

(a) The Department of the Interior is responsible for administering the Federal Water Pollution Control Act as amended; certain functions relating to water pollution control under Section 702(a) of the Housing and Urban Development Act of 1965, Section 212 of the Appalachian Regional Development Act of 1965, and Section 106 of the Public Works and Economic Development Act of 1965, and Executive Order 11288, "Prevention, Control and Abatement of Water Pollution by Federal Activities."

The stated purpose of the Federal Water Pollution Control Act is "to enhance the quality and value of the nation's water resources and to establish a national policy for the prevention, control, and abatement of water pollution. The responsibilities of the Department of the Interior, under the above legislation and Executive Order, involve the prevention and control of water pollution in consequence of the benefits resulting to the public health and welfare, giving due regard to the improvements which are necessary to conserve the nation's waters for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, and agricultural, industrial, and other legitimate uses. To meet these responsibilities the Department of the Interior, through the Federal Water Pollution

Control Administration, conducts programs to identify and measure the extent of pollution and its effects on water uses and to assure the treatment and control of waterborne wastes.

(b) The Department of Health, Education, and Welfare, under the Public Health Service Act as amended, is responsible for the protection of the public health. Within this responsibility, the Department through the Public Health Service is, therefore, concerned with the causes, diagnosis, treatment, control and prevention of physical and mental diseases and impairments of man. As related to Reorganization Plan No. 2, these responsibilities include: determination of the health significance of water pollution; investigation of waterborne diseases and means for their control; provision of consultation to the Department of the Interior on the public health aspects of water pollution; and advising on the public health questions involved in the inclusion of storage for water quality control in Federal reservoirs.

5. Under the terms of this Interdepartmental Agreement, the Department of Health, Education, and Welfare will provide advice to the Department of the Interior as follows:

(a) Recommendations on criteria for water quality standard setting based on health aspects of intended water use for drinking water supplies, shellfish and other marine food production, bathing, and other water contact activities. Recommendations will be provided and modified as new supporting data are developed.

(b) Upon request, consultation and technical assistance on specific water-related health problems, as these may arise in connection with water pollution control activities, such as comprehensive pollution control program, enforcement actions, control of pollution from Federal installations, water pollution research projects, construction grants, and the study of water pollution from vessel operations. In cases where epidemiological surveillance activities indicate that a probable public health hazard exists, the Public Health Service will initiate appropriate action to advise the Federal Water Pollution Control Administration.

(c) Review and comment on construction grant applications and on requirements for control of pollution from Federal installations for specific projects whose operation may adversely affect the sanitation of shellfish-growing waters. The Federal Water Pollution Control Administration will refer all such projects to the Public Health Service for review and comment.

6. Section 1(e) of Reorganization Plan No. 2 of 1966 provides for the Department of Health, Education, and Welfare to advise on public health questions involved in determination by Federal agencies of the need for and value of the inclusion of storage for water quality control in Federal reservoirs. Advice on the effects of streamflow regulation on public health will be provided by the Public Health Service based upon the studies prepared by the Federal Water Pollution Control Administration under Section 3(b) of the Federal Water Pollution Control Act. The Federal Water Pollution Control Administration report will be provided to the Public Health Service for review and comment. The Public Health Service comments, together with its own report on the production of disease transmitting insects and other environmental health considerations in the project area, will be submitted to the Federal construction agency concerned.

7. To assure an adequate basis for such advice and consultation to the Department of the Interior, the Department of Health, Education, and Welfare will, through the Public Health Service, conduct the following kinds of studies on the health aspects of water pollution:

(a) Epidemiological, microbiological, radiological, and toxicological research and investigations into the human health significance of waterborne contaminants, to determine health tolerance for such contaminants as they affect drinking water supplies, shellfish and other marine foods production, and water contact activities.

(b) Epidemiological surveillance of the incidence of waterborne disease based on disease reporting, and on health-related water quality data derived from the Public Health Service drinking water quality network established under the Interstate Quarantine Regulations, the National Shellfish Sanitation Program, and the Radiation Surveillance Center, and on data from the program activities of the Federal Water Pollution Control Administration.

Investigation of waterborne disease outbreaks will be conducted in cooperation with State and local health departments. Data and participation will be requested from the Federal Water Pollution Control Administration when water pollution is involved in the outbreak. Reports based on these investigations which identify pollution that presents a danger to health will be referred to the Federal Water Pollution Control Administration for appropriate action.

(c) Studies of the relationship of surface water characteristics to the production of disease vectors such as disease-transmitting insects, snails, and protozoa.

(d) Development of techniques for the

identification, measurement and study of the behavior of waterborne contaminants which cause or influence disease, such as viruses, bacteria, organic chemicals, and trace elements. The results of these Public Health Service studies will be made available to the Federal Water Pollution Control Administration as a complement to its studies on identification and measurement of water-pollutants, the results of which in turn will be made available to the Public Health Service.

Study of methods of removing contaminants of health significance to meet human tolerance levels as related to drinking water, swimming pools, shellfish depuration, and food processing. To avoid duplication of Federal installations for pilot plants, when such facilities are required to study methods of removing contaminants from drinking water, Public Health Service personnel may use Department of the Interior facilities. To assure that such installations will adequately serve such purposes, the Department of the Interior shall consult with the Department of Health, Education, and Welfare in their design.

Study of the human health relationship of waterborne contaminants to animals and plants used as sources of foods, such as shellfish and other marine foods, food crops irrigated with polluted water, including their field packaging, and use of sewage sludge as a fertilizer and soil conditioner.

8. The Public Health Service and the Federal Water Pollution Control Administration will exchange on a regular basis relevant health-related water quality data and research results. Particular attention will be given to prompt exchange of significant new findings which would affect the program responsibilities of either agency.

9. To effect essential coordination between Public Health Service and the Federal Water Pollution Control Administration, and to insure fulfillment of this agreement, each agency will designate an official liaison representative. These representatives, together with appropriate staff, shall meet at the request of either agency to discuss measures taken to implement this agreement and review any evident or emerging technical, administrative or fiscal problems which either agency considers might affect the proper functioning of this agreement. Any unresolved problems will be brought to the attention of the respective Secretaries.

JOHN W. GARDNER

Secretary of Health, Education, and Welfare

August 8, 1966

K. W. Nasi

STEWART L. UDALL
Secretary of the Interior
August 8, 1966
LYNDON B. JOHNSON
The President
September 1, 1966)

* * *

MR. STEIN: As many of you know, Mr. Nasi has been up here and in various other places of the country as a conferee himself, and I am sure we will continue to work in the future as we have in the past.

Mr. Clare?

MR. CLARE: I have only one more indirect introduction to make, and this will be all for the Federal participants.

We received word from Mr. William F. Carbine, who is Regional Director for the Bureau of Commercial Fisheries at Ann Arbor, Michigan, that his office would like very much to submit a statement by mail and have it included in the record. He was unable to send anyone to this conference, but he has asked that we include his statement, which will be forwarded later, in the record of the conference.

MR. STEIN: We will hold the record open for two weeks for Mr. Carbine to get it in, and that will be included.

That is all?

MR. CLARE: That is all of the Federal conferees.

Have I missed anyone of the Federal participants who would like to make a statement for any Federal agency?

(No response.)

MR. STEIN: Does that conclude the Federal presentation?

MR. CLARE: Yes.

MR. STEIN: If it does, may we stand recessed for ten minutes, and then we will take up the State presentation.

(Whereupon a recess was had.)

MR. STEIN: May we reconvene?

Mr. Eckles, for Colorado.

STATEMENT OF RICHARD T. ECKLES, CONFEREE AND COORDINATOR OF NATURAL RESOURCES, CHAIRMAN, STATE WATER POLLUTION CONTROL COMMISSION, DENVER, COLORADO

R. T. Eckles

MR. ECKLES: Mr. Chairman, at this time I would like to recognize and comment briefly on the magnificent response that the Colorado Water Pollution Control Commission has received from the users of the water of the State of Colorado.

The plans that have been submitted for additional abatement programs by these users have been quite heartening. Later this morning we will hear a progress report by our Technical Secretary.

I would also like to comment on the dedication that the State Water Pollution Control Commission has shown towards this momentous task. They have put in literally hundreds of man-hours writing and rewriting proposals for the State's abatement programs.

We will have a hearing on the Platte River in January. This is briefly what I would like to recognize this morning.

Within our audience, there are members of our Water Pollution Control Commission: Mrs. Chronic, Mr. Lewis, Mr. Nicola, Mr. Gaobetti, Mr. Sommerville, Admiral Jelley and Dr. Evans.

I think you will be pleased with our progress report.

These are the few statements I would like to make.

Thank you.

Mr. Rozich, are you prepared now to give our progress report?

STATEMENT OF FRANK ROZICH, TECHNICAL SECRETARY,
WATER POLLUTION CONTROL COMMISSION, COLORADO
STATE DEPARTMENT OF PUBLIC HEALTH, DENVER,
COLORADO

MR. ROZICH: Mr. Eckles, Chairman Stein, ladies and gentlemen:

Since last April, when the Second Session of the South Platte Conference recessed, we have gone about contacting all of the violators that were listed in this report. The response has been wonderful, and I think we do have a very favorable report to give.

I will use the same format that Mr. Bauer used. In other words, I will go right down the same list that he did.

In answer to the question regarding proposed standards or suggested standards for the various streams, I should point out that both the State and Federal law require that we prepare and the Commission adopt such standards after a public hearing.

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Our standards have not as yet been prepared. We anticipate that these will be completed about the middle of December, and, as Mr. Eckles pointed out, we will begin holding hearings on these standards in January, so we can't say that we accept or reject the recommendations regarding streams.

Specifically, with regard to the various communities listed, it should be pointed out that the Denver Metropolitan Sewage Disposal District Plant No. 1 began operation on October 17th of 1966. At this time it is my understanding that they are putting out an effluent meeting the requirements suggested here of about 91 or 92 percent.

Connected to this system at the present time are the City of Arvada; the Baker Sanitation District will be connected in about three weeks; the City of Denver Northside Plant is connected; the City of Denver Eastside Plant is connected; North Washington and Thornton, a forced main and lift station are presently under construction and should be completed next spring; the City of Northwest Lakewood Sanitation District is connected; the City of Westminster is connected; the City of Wheatridge is connected; and I believe that is it.

With reference to Clear Creek Sanitation District --

MR. STEIN: Will you cover the others?

MR. ROZICH: I will. I am going back over those.

MR. STEIN: Yes.

MR. ROZICH: Clear Creek Valley Sanitation District has chosen not to join Metro and has an expansion program presently under way. They say they will be in full operation by June 1967.

The Federal correctional institution, I understand, tied on to the Lakehurst Sanitation District sewer a week ago today. This Lakehurst is a part of the Metro System.

Fruitdale Sanitation District is the next one. They have expressed a desire to join Metro, but are a little leery as to whether or not by removing their effluent from the stream they would be subjecting themselves to a lawsuit. They have consequently instigated a friendly lawsuit to determine whether or not they will be liable for any damages if they take their effluent out of the stream.

The City of Aurora --

MR. STEIN: Do you have Thornton covered?

MR. ROZICH: Thornton and North Washington are presently constructing interceptor systems and a lift station. This will be going into Denver Metro.

The City of Aurora originally had proposed going it alone. Just this month, their council has approved, and

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so has Denver Metro's Board of Directors approved, but still subject to a public hearing in Aurora, that they join the Denver Metro System. They say that early next year they will be coming in asking for Federal aid in this respect.

Fitzsimons, Brighton and South Adams are continuing to provide adequate treatment.

The City of Aurora (Westerly) is covered in with the entire Aurora setup.

The City of Evergreen has a letter dated September 8th, in which they point out that the suggestions made have been incorporated as of last May 10th.

The City of Littleton is next. They are providing funds in their 1967 budget and hope that the installation will be in by January 1, 1968. This is for adequate disinfection.

South Lakewood informs us that they are now in compliance. Analyses made of their effluents indicate that this is true.

Next is Buckley Air Station. They have installed a chlorinator and a detention basin, and is presently in operation.

City of Englewood: They are presently under construction and are installing an adequate disinfection system. They hope to be in operation by January 1, 1967.

F. Rozich

City of Golden: This plant is operated by the Adolph Coors Company. They have a plant expansion program presently under way, and I will read a letter from them later.

The Metro District plant, as I pointed out, began operation October 17th, and so far it has gone along all right.

Armour & Company: All plant wastes connected to sanitary sewer, with the exception of cooling water, which flows to the South Platte River.

Capitol Rendering Company: They have joined the North Washington Sanitation District, will tie into the system on January 1, 1967, and once the North Washington, Thornton interceptor is in, which should be next spring, they will be tied into Metro.

Chicago, Burlington and Quincy Railroad: Septic tanks being installed in the three yard offices which discharge to storm sewers. No definite plans received for the disposal of train washing waste, which discharge to the South Platte River. Consideration being given to moving this operation to another location.

Colorado and Southern Railroad: All wastes discharged to rivers be pretreated and discharged into sanitary sewer systems: Construction schedule, to start this month.

MR. STEIN: Does that mean that that will go to the Metro for further treatment?

MR. ROZICH: Yes.

Denver & Rio Grande Railroad -- I am afraid I overlooked that one. I don't see it right here. Maybe I have it later on.

Gates Rubber Company industrial waste being removed from storm sewer system with plant treatment facilities to be provided. Schedule for completion, June of 1967.

Kuner Empson Canning Company: That is at Brighton. They have hired the firm of Parker & Underwood. They are negotiating with the city to go into the city system. Parker & Underwood have been retained to determine the strength of their wastes and come up with an equitable charge that the city might charge them for this.

Litvak Packing Company: All wastes presently go into the North Washington Sanitation District system.

United Fryer Stillman: All plant wastes connected to sanitary sewer, with the exception of cooling water, which flows to the South Platte River.

Samsonite Corporation: Constructing new hardware plant in Mount Bellow, which is out east of Denver here, with pretreatment of waste waters and eventual discharge

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to the sanitary sewer system. Scheduled for completion by January 1967.

I have an additional one that will come later, but since this is all part of the Denver system I will put it in at this time.

Denver Union Stockyards: A combined sewer, and the major portion of the stockyards is discharging into the sanitary sewer.

The North Cattle Pen and the Southeast Cattle Unloading Pen are connected with the storm sewer. These are being cleaned by dry methods, and these storm sewers are being sampled under dry and wet weather conditions to determine if water pollution problems exist.

The Public Service Company is planning to combine fly ash and water-softening backwash into settling ponds at the Zuni Power Plant. Construction scheduled to start next year, with completion scheduled for September 1967.

Stapleton Airfield: A study is presently under way by a consulting engineering firm. Recommended solutions for waste pollution problem expected by the end of this year. When report is received, appropriate action will be taken.

Colorado School of Mines Research Foundation: We received a letter from them in early September, in which they asked for our recommendations as to what was necessary to be done. We did reply to this, and they are presently working on the problem.

Coors Porcelain Plant: I have a letter which I will read later on.

Empire and Continental Oil are now one, and I have a letter which I will read later on that.

Tenneco Oil Company, the same thing.

Gates Cyclo Company: They have installed a sump. All wastes presently go to the sump, are pumped out of the sump into a tank truck, and are being hauled to the farms in the area as a fertilizer, not to crops, but they put it on the land between crops. None of the wastes at present go into the river.

The general recommendations I will cover in a report from the City and County of Denver later.

Feedlot operations: I received a copy of a proposed or a draft of a new law that the feedlot industry proposes to introduce in the next session of the legislature.

In this law they propose to license themselves, and I will read Section 9, which refers to the recommendations made here, if I can find it here. I will get back to it later. I can't seem to find it right now.

I believe I had better get to the letters here. Most of these cover that now.

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This is a letter from the City and County of Denver, Dr. J. Douglas McCluskie, who is Director of Environmental Health Services:

"October 27, 1966

"Mr. Frank Rozich, P.E.
Technical Secretary
Water Pollution Control Commission
Colorado State Department of Public Health
4210 East 11th Avenue
Denver, Colorado 80220

Dear Mr. Rozich:

"Enclosed you will find the combined report on water pollution control activities of the Denver Department of Public Works and the Denver Department of Health and Hospitals.

"You may enter this report as a part of the report of the State Health Department if you wish, or read it separately.

"As there is considerable activity taking place within our Department on water pollution abatement, this report will not remain current for too long a period.

"If you have any questions concerning the information contained within this report, please contact either Mr. Peabody or myself.

"Sincerely yours,

/s/ J. Douglas McCluskie, D.V.M., M.P.H.
Director, Environmental Health Service

JDMc:ra

cc: Dr. David Cowen
Dr. Samuel Johnson
Mr. Horace Smith
Mr. Thomas Peabody

Enclosures"

(The statement of the City and County of Denver is as follows:

Since the last water pollution conference held in April of this year, the City and County of Denver has continued to progress in its water pollution control program.

Because water pollution abatement is a joint effort in Denver by the Department of Public Works and the Department of Public Health, a joint statement has been prepared for this conference.

The greatest source of water pollution on the South Platte River within the City and County of Denver, has now been corrected with the discharge of sewage effluent from the North Side Treatment Plant to the new Metro facilities for secondary treatment. This took place on October 17, 1966. The East Side Primary Treatment Plant will soon be abandoned when treatment at the Metro Plant becomes available.

The ordinance covering the control of sewage wastes in storm and sanitary sewers and water courses passed City Council and was put into effect July 1, 1966. Corrective steps are being taken to correct the discharge of paunch manure into the sewer systems as provided in this ordinance. (See attached ordinance and rules and regulations.)

A study is now under way by a consulting engineering firm at Stapleton Airport. A recommended solution to the waste pollution problem associated with this operation is expected by the end of this year. When this report is received, appropriate measures will be taken with respect to administration and the facilities needed at the airport.

To control industrial water pollution, a coordinated effort is being made by both Departments to connect industrial wastes which now discharge into the river to the sanitary sewer system. Efforts are also being made to discharge unpolluted waters which flow to the sanitary sewer into the storm sewer or into the river to prevent possible overloading of the sewage plant.

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At the present time, 112 outlets on the South Platte River have been established as routine sampling stations to evaluate all wastes discharging to the river. These sampling stations include outlets from industries and storm sewers which discharge water to the river under dry weather conditions. Five sampling points have also been selected along the South Platte River within the City and County of Denver to collect samples twice monthly. These samples will give us information on the pollutional condition of the stream as it flows through Denver.

As a result of this water pollution program, many industries have been pinpointed as causing water pollution and orders have been written to correct their pollution problems. To date, six industrial water pollution sources have been corrected, eight corrections are under way, three are waiting for a sanitary sewer line which will be programed by the city soon, and seven have shown very little response to the orders which have been written. The ones not responding are all trucking type operations which discharge wash waters into the river. The plan at the present time is to take legal action against these industries in the near future to obtain compliance.

At the present time, 16 storm sewers are causing minor pollution to the South Platte River. Our efforts have corrected two of these since the last conference, but with routine sampling, an additional four have been added to the list.

The City of Denver plans to continue its water pollution control program in the future and it is anticipated that our efforts will result in eventual abatement of pollution in both the South Platte River and Cherry Creek within the boundaries of the City of Denver.

October 27, 1966

* * *

DEPARTMENT OF PUBLIC WORKS

CITY AND COUNTY OF DENVER, COLORADO

RULES AND REGULATIONS GOVERNING SANITARY SEWAGE CHARGES AND CONTROL OF WASTE WATER

ISSUED IN ACCORDANCE WITH THE AUTHORITY
OF ARTICLE 167 OF THE REVISED MUNICIPAL
CODE OF THE CITY AND COUNTY OF DENVER

F. Rozich

Approved and Adopted:

Signed by:

W. H. McNicholls
Manager of Public Works

Approved for Legality:

Signed by: WNV

Wm. H. Van Duzer
Attorney for the City and County
of Denver

- - -

FOREWORD

The following Rules and Regulations are issued by the Manager of Public Works of the City and County of Denver under authority of Article II of the Charter and Article 167 of the Revised Municipal Code of the City and County of Denver. Three copies of these Rules and Regulations are filed with the City Clerk, one copy with the City Attorney for the City and County of Denver, and one copy in the office of the said Manager of Public Works. A notice has been published by the said Manager of Public Works on June 25, 1966, in the "DAILY JOURNAL," stating that the filings as aforesaid have been made and that the date of these filings was June 24, 1966.

Definitions

The following definitions shall apply in the interpretation and enforcement of these Rules and Regulations.

1. through 54. For the purpose of these Rules and Regulations the definitions contained in Subsection 167.1-3 (1. through 54.) of Section 2 of Ordinance No. 286, Series of 1966, be and the same are hereby adopted.

55. Sewer Use Permit shall mean a permit issued by the Manager to a person authorizing the use of the City's sewerage system for the purpose of disposing of waste water. This permit is not to be confused with a sewer connection permit, in fact, it is a requirement of a sewer connection permit.

56. Sewer Connection Permit shall mean a permit issued by the Manager to a person for the purpose of connecting

a building sewer to a public sewer. This permit will be issued only to a person that is licensed by the City to perform such work, and only then when a sewer use permit has been issued previously to the person that requires the building sewer connected to the public sewer.

57. Production Units shall mean units of measurement of a product of industry.

58. Water Use Data shall mean all information relative to the consumption of water by a premises, e.g., but not restricted:

    Source, quantity, use and distrubtion, and disposal.

59. Sewage Flow Meter shall mean a device that measures and records the flow of sewage. It may, also, measure the rate of flow of sewage.

60. Water Meter shall mean a device that measures the flow of water, or the rate of flow of water.

61. Inspection Chamber shall mean an accessible structure through which sewage from a building sewer flows and from which samples of said sewage may be collected for the purpose of being tested.

62. Control Manhole shall mean a structure that is accessible for the purpose of maintaining a building sewer.

A control manhole may be used as an inspection chamber.

63. Flow Control Device shall mean a structure, or structures, with equipment or attachments for the purpose of delaying, detaining, equalizing, or otherwise controlling the flow or discharge of sewage from a premises through a building sewer into a public sewer.

64. Sampling shall mean the periodic collection of sewage as it flows from a premises through a building sewer.

65. Testing shall mean the analysis of samples of sewage.

66. Water Billing Data shall mean the information used by the Water Board to determine the amount of money to charge for the consumption of water by a premises.

67. Flow-Equalizing Facilities shall mean devices, structures, or equipment for the purpose of equalizing the flow of sewage from a premises through a building sewer into a public sewer.

68. Pretreating Facilities shall mean structures, devices, or equipment for the purpose of removing deleterious wastes from sewage generated from a premises prior to its discharge into a public sewer.

69. Deleterious Wastes shall mean any wastes contained in sewage that would be harmful or damaging to the City's sewerage system or to the sewage treatment processes

used by either the City or the Metropolitan Denver Sewage Disposal District.

- - -

RULES AND REGULATIONS GOVERNING SANITARY SEWAGE CHARGES AND CONTROL OF THE WASTE WATER.

The Manager of Public Works by authority vested in him by the provisions of Sections A2.3-4 and A2.3-5 of the Charter and Article 167 of the Revised Municipal Code of the City and County of Denver, hereby establishes the following Rules and Regulations for the administration and enforcement of the said Sections and Articles.

1. CLASSIFICATION AND RECLASSIFICATION OF CUSTOMERS FOR SEWER SERVICE CHARGES. Article 167 of the Revised Municipal Code defines the customer classes and the sewer service charges to be levied against those customers for the use of the sewerage system of the City and County of Denver, and charges the Manager of Public Works with the responsibility of classifying and reclassifying customers for the purpose of applying these charges. The following Rules and

Regulations shall apply relative to this responsibility:

a. Buildings located within the City and County of Denver used for or having the potential of being used for living quarters of no more than two families shall be classified as Inside City Residential Customers and shall be further classified as Metered if the building has a water supply from the Denver Water Board which is paid for upon a metered quantity, or Flat Rate if the water supply is from the Denver Water Board and paid for based upon the number and type of water-using fixtures and devices.

b. Buildings located within the City and County of Denver used for business operations that produce a sewage discharge into the City's sewerage system that has a strength greater than normal (containing over 250 ppm B.O.D. or over 300 ppm suspended solids) shall be classified as Inside City Industrial Waste customers.

c. Buildings located within the City and County of Denver used for living quarters or having the potential of being used for living quarters for more than two families, or used for business operations that produce a sewage discharge into the City's sewerage system that is not greater than normal strength (containing 250 ppm or less B.O.D. or 300 ppm or less suspended solids) shall be classified as Inside City Commercial and Industrial Customers.

d. Persons desiring to connect buildings to the City's sewerage system shall provide the Manager with the information required in the Rules and Regulations pertaining to the Application for Connection to the Public Sewers. The Manager will use this information in determining the Customer Classification of the building desiring connection.

e. Buildings connected at the time of the enactment of Article 167 will be classified by the Manager based upon information obtained from, but not limited to, the following sources:

(1) The Board of Water Commissioners' Customer Classification.

(2) The Yellow Pages of the Telephone Directory.

(3) The Chamber of Commerce.

(4) Contact with the owners or tenants of the buildings, as follows:

  (a) Interviews.

(b) Correspondence.

(c) Questionnaires.

(d) Sampling and Testing.

(e) Inspection.

f. Customers will be reclassified by the Manager by his own initiative if he determines that the following has occurred:

  (1) The existing classification was in error.

  (2) The use of the building is changed to such a degree that another classification is in order.

  (3) The sewage strength changes due to changes in operation.

g. Customers will be reclassified at the request of the customer if the Manager determines that the customer's reasons for a change are in order.

2. APPLICATION FOR SEWER USE PERMIT.

a. Owners of buildings shall make application to the Manager of Public Works for a Sewer Use Permit. This application shall be on forms provided by the Manager and shall contain the following general information:

  (1) Name and address of the owner of the building.

  (2) Name and address of person responsible for

payment of the sewer service charge.

(3) Location of the building for which the sewer use is desired.

(4) Purpose for which the building will be used.

(5) Number and type of water using or producing devices or fixtures.

(6) Classification or type of sewage to be discharged into the City's sewerage system.

(7) Source of water supply or supplies.

(8) Number of single family living units.

b. Dependent upon the data contained in the general information the manager may require that more specific information be supplied with the application for sewer use, as follows:

(1) Projected analysis of the constituents of the sewage discharge.

(a) B.O.D.

(b) S.S.

(c) Toxic elements or compounds

(d) Deleterious wastes.

(e) Etc.

(2) Projected production units.

(3) Plans for private sewerage system.

(4) Plans for private water supply and

distribution system.

(5) Projected number of residents or employees.

(6) Projected water use data.

(7) Projected water use not tributary to the sewerage system.

(8) Etc.

3. SEWER USE PERMITS.

The Manager will review the general and specific information contained in the application for sewer use, and based upon this review he shall determine if the proposed use of the sewer is compatible with the provisions of Article 167; if so, he shall issue a sewer use permit conditioned upon the representations made in the application; if not, he shall reject the application and notify the applicant of his reasons for the denial.

a. Form of the Sewer Use Permit.

The sewer use permit shall contain the following information:

(1) Name and address of the owner of the building.

(2) Name and address of the person responsible for the payment of the sewer service charge.

(3) Location of the building for which the permit is issued.

(4) Customer classification of the building for which the permit is issued.

(5) Conditions of the sewer use permit, e.g., but not restricted.

  (a) Limitations of quantity and quality of the sewage discharge.

  (b) Installation of sewage flow meter, or meters.

  (c) Installation of water meter, or meters.

  (d) Installation of inspection chamber, or chambers.

  (e) Installation of control manhole, or manholes.

  (f) Periodic submission of production unit data.

  (g) Installation of pretreatment facilities.

  (h) Installation of flow control devices.

b. Form of the Sewer Use Denial.

The sewer use denial shall contain the following information:

(1) Name and address of the owner of the building or proposed building.

(2) Location of the building or proposed building.

(3) Specific notation of the reason for the denial.

Basis for denial would be that the use of the building would generate a sewage discharge to the City's sewerage system that would not meet the limits of quality and quantity of deleterious wastes as outlined in Section XII of the Rules and Regulations; or that the private sewerage or waste system of the building being considered would not lend itself to the measurement of the quantity or quality of the sewage or water use necessary to compute the sewer service charge of the subject building.

(4) Statement of conditions whereby the applicant could obtain a sewer use permit.

4. ESTABLISHMENT OF STRENGTH INDEXES.

The Manager of Public Works is charged with the responsibility of establishing strength indexes of B.O.D. and S.S. for the purpose of determining the surcharge to be levied against Industrial Waste Class Customers and Outside Surcharge Customers. The following Rules and Regulations will apply relative to these determinations:

a. Methods.

One of the following methods will be used for a specific customer depending upon the arrangement of the private sewer and water facilities of that customer, and upon the judgment of the Manager:

Sampling and Testing
Comparison
Best Judgment.

(1) Procedures:

(a) Sampling and Testing.

This method involves the collection of samples of the sewage discharged by the customer and the conducting of laboratory tests of that sample to determine the B.O.D. and S.S. contents, which are the respective strength indexes.

(b) Comparison.

This method involves the comparison of the operation, business, product, etc., of a customer that cannot be sampled or has not been sampled with a similar customer that has had its strength index established by sampling. The strength indexes of the sampled and tested customer are then established for the customer that has not been sampled.

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(c) Best Judgment:

In those cases where sampling and testing or comparison methods cannot be utilized or where it is impractical for either of these methods to be used, the Manager may use his best judgment in the establishment of strength indexes.

(2) Dependencies:

(a) Sampling and Testing.

This method is limited to those customers that have inspection chambers or control manholes on the private sewer connection that can be used by the Manager for sampling the sewage discharged from the building under consideration. The Manager may determine that it is not economically feasible to sample and test even if the private sewerage facilities lend themselves to this method.

(b) Comparison.

This method is dependent upon test data that is available from another customer that due to its operation, business, product, etc., it would be proper to assume that the two customers would have similar sewage.

(c) Best Judgment.

This method is dependent upon knowledge of the characteristics of a sewage discharged from a specific type of operation, business, process, etc.

5. SAMPLING, MEASURING, OBSERVING, AND TESTING.

Sampling of customers' sewage flow by the Manager is necessary for the following reasons:

To determine strength indexes.

To determine if deleterious wastes are being discharged into the City's sewerage system.

The following Rules and Regulations shall apply relative to this duty of the Manager:

a. Duly authorized employes of the City having proper credentials and identification shall be permitted to enter all properties for the purposes of sampling and testing sewage discharges.

b. While performing the necessary work on private properties relative to sampling, measuring, observing and testing all duly authorized employes of the City shall observe all safety rules applicable to the premises established by the owner or tenant.

c. Sampling shall be carried out by customarily accepted methods to reflect the effect of the constituents upon the sewerage system and to determine the existence of hazards to life, limb, and property, or to determine the strength indexes.

d. The particular analyses involved will determine whether a twenty-four hour composite of all building sewers of a premise is appropriate, or whether a grab sample or samples should be taken. Normally, but not always, B.O.D. and S.S. analyses are obtained from 24-hour composites of all building sewers.

e. All measurement, testing, and analyses of sewage shall be determined in accordance with "Standard Methods."

f. The Manager will submit a copy of the results of the testing and analyses of samples to the customer from which the sample was obtained.

g. If a customer considers that the results obtained from the sampling of his sewage are not representative he may request that the procedure of sampling and testing be repeated. The Manager may honor such a request provided:

(1) The customer submits valid reasons as to why he feels that the previous results are in error.

(2) The customer agrees to bear all costs of the additional sampling, testing, and analyses.

(3) The employes and equipment required to perform the additional work can be scheduled without upsetting the normal work schedule.

6. INSTALLATION OF INSPECTION CHAMBERS OR CONTROL MANHOLES.

In order that the Manager can establish strength indexes by sampling and testing and in order to monitor sewage for deleterious wastes, he may find it necessary to require some customers to install inspection chambers or control manholes. The following Rules and Regulations are established relative to this requirement:

a. So far as requiring an inspection chamber or control manhole for the purpose of determining strength indexes by sampling and testing, the Manager shall first be satisfied that the strength indexes cannot adequately be established by either the comparison method or the best judgment method.

b. So far as requiring an inspection chamber or

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control manhole for the purpose of monitoring sewage for deleterious wastes, the Manager shall first be satisfied that such monitoring cannot be accomplished by inspection and observation of the operations or processes that produce the sewage that he suspects contains deleterious wastes.

c. After the Manager has determined the need for an inspection chamber or control manhole, he shall issue an order to the customer affected to have the facility installed at that customer's expense. The order shall contain the following information:

(1) Name and address of person ordered to comply with the requirement of installing the facility.

(2) Location of building that the installation would serve.

(3) Minimum criteria to be followed in the design of the facility.

(4) Minimum specifications to be followed in the construction of the facility.

(5) Time limit for the submission of plans to the Manager for his review and approval.

(6) Time limit for the completion of the

installation.

(7) Statement of reasons for the requirement by the Manager of the installation.

(8) Statement of penalty for non-compliance with the order.

d. In establishing time limits for the design and construction of inspection chambers or control manholes, the Manager shall weigh the potential hazard to life, limb, and property so far as monitoring deleterious wastes, and he shall weigh the economical aspects relative to his inability to establish strength indexes without testing.

7. INSTALLATION OF WATER METERS.

In the event that a customer has a water supply separate from that of the Water Board, then the Manager shall require that the customer install a water meter in order to measure the quantity of water from that source that would be entering the sewerage system of the City. The Manager shall issue an order to effect this requirement that contains the following information:

a. Name and address of person being ordered to comply with the requirement of installing the meter.

b. Location of the building that the installation would serve.

c. Minimum specifications of the meter.

d. Time limit for the submission of specifications for the Manager's approval.

e. Time limit for the completion of the installation.

f. Statement of reasons for the requirement by the Manager of the installation.

g. Statement of the penalty for non-compliance with the order.

8. ADJUSTMENT OF WATER BILLING DATA.

a. In those cases where the customer receives water from a source, either in whole or in part, other than the Water Board, then the Manager shall total the quantity of water used from all sources and the sum of the quantities shall be used to determine the sewage service charge, computed by relating the amount of water used to the Water Board charges and billings for that amount of water and applying the computation provided in Section 167.2-1 of the Revised Municipal Code.

b. In those cases where it can be shown to the satisfaction of the Manager that a portion of the water measured by all meters of the customers does not enter the sewerage system of the City and if it is impractical or uneconomical, in the judgment of the Manager, to install a sewage flow meter, then the Manager may estimate the quantity of water that does not enter the sewage system of the City and deduct this amount from the total quantity of water indicated to be used by meters on all sources, and the resulting quantity of water shall be used to determine the sewerage service charge.

9. INSTALLATION OF SANITARY SEWAGE FLOW METERS.

In those cases where it is practical, economical, and desirable to install sanitary sewage flow meters, then the Manager may require or shall permit the installation of sanitary sewage flow meters and the quantity of sewage measured by such meters shall be used to determine the sewage service charge, computed by relating the amount of sewage measured to Water Board charges and billings for that amount of sewage and applying the computation provided in Section 167.2-1 of the Revised Municipal Code.

a. Installation by Order of the Manager.

If the Manager determines that it is both practical and economical and it is desirable to measure sewage by means of a sewage flow meter, he may issue an order to a customer requiring the installation of such meter, or meters. The order shall contain the following information:

(1) Name and address of the person being ordered to install the meter.

(2) Location of the building that the installation would serve.

(3) Minimum criteria to be followed in the design of the meter.

(4) Minimum specifications to be followed in the construction of the facility.

(5) Time limit for the submission of plans and specifications to the Manager for his approval.

(6) Time limit for the completion of the construction of the facility.

(7) Statement of reasons for the requirement by the Manager of the installation.

(8) Statement of penalty for non-compliance with the order.

b. Installation at the Request of the Owner or Customer.

If the owner, or customer, desires to install a sanitary sewage flow meter and have his sewage service charge calculated on the basis of the measurement by that meter, he shall apply to the Manager for a permit for such installation after obtaining information from the Manager relative to minimum criteria for design and specifications. The application shall contain the following information:

(1) Name and address of owner.

(2) Location of building to be served.

(3) Statement of reasons for the installation.

(4) Plans and specifications of the proposed facility.

(5) Time limit for construction.

c. Permit for the construction of a sewage flow meter shall contain the following:

(1) Name and address of owner.

(2) Location of the building to be served.

(3) Conditions of the permit.

d. Denial of a permit for the construction of a sewage flow meter shall contain the following:

(1) Name and address of the owner.

(2) Location of the building for which the permit was requested.

(3) Reasons for the denial.

(4) Conditions whereby a permit could be obtained,

if any.

10. SUBMISSION OF PRODUCTION UNIT DATA.

In order that the Manager may maintain a check of test results of sewage obtained by sampling and to, further, enable him to establish a medium for the establishment of strength indexes by the comparison method, the Manager may require that a customer submit a tabulation of the number of production units produced during sampling and billing periods, or he may require this tabulation during any other period or periods that he deems desirable and important. The following Rules and Regulations will apply relative to this requirement:

a. The information obtained shall be confidential and shall not be released as information to any person or persons without a written release from the manufacturer or processor.

b. The Manager will provide forms for the purpose of tabulating the required data.

c. The Manager will notify the manufacturer, or processor, when the tabulation is to commence and when it is to cease.

d. The manufacturer, or processor, will report to the Manager any deviations from normal production operations that occur during the specified periods of tabulation.

e. The manufacturer will submit the required data within 24 hours of the specified time to cease the tabulation.

11. INSPECTION OF PRIVATE SEWERAGE SYSTEMS AND PREMISES.

In order that the Manager may obtain knowledge relative to potential, or actual, discharges of deleterious wastes and in order that he may obtain knowledge relative to the establishment of strength indexes, he may inspect private sewerage systems and premises. The following Rules and Regulations relative to this authority of the Manager shall apply:

a. Duly authorized employes of the City having proper credentials and identification shall be permitted to enter all properties for the purposes of inspecting, observing, and making inquiry relative to private sewerage systems and operations and processes pertaining to the disposal of sewage.

b. While performing the work necessary to the functions outlined above all duly authorized employes of the City shall observe all safety rules applicable to the premises established by the owner or tenant.

c. The Manager or his duly authorized representative shall have no authority to inquire into any processes beyond that point having a direct bearing on the kind and source of discharge to the sewers or water courses or facilities for waste treatment.

d. Inspections shall be made at reasonable times and hours.

12. LIMITS OF QUALITY AND QUANTITY OF DELETERIOUS WASTES.

In order to protect the sewerage system from damage, destruction, deterioration, misuse or malfunction and to guard against hazards to life or limb, and the creation of a public nuisance, the following Rules and Regulations shall apply relative to the discharge of sewage containing deleterious wastes:

a. No person shall discharge or cause to be discharged any polluted water into the City's storm sewers or into water courses that traverse the City.

b. No person shall discharge or cause to discharge into the sanitary sewerage system of the City, except for areas of existing combined sewers, storm water drainage from ground surface, roof leaders, catch basins, or any other source, or subsurface drainage or ground water.

c. Industrial cooling water, unpolluted process waters, car washing wastes, swimming pool drainage, and floor drainage from enclosed covered areas may be connected to the sanitary sewerage system by special permit from the Manager. A permit for such purposes will be considered by the Manager based upon an application containing the following general information:

(1) Name and address of owner.

(2) Location of property for which the request is made.

(3) Description of the facility or operation requested for connection.

The Manager may require specific information as follows, but not limited:

(1) Estimated quantities and qualities of the waste to be discharged including maximum rates.

(2) Submission of plans and specifications.

The Manager may issue permits for the connections conditioned upon the following but not limited:

(1) The construction of flow control devices.

(2) The construction of valves or gates.

(3) The construction of grease, oil, and sand traps.

d. Sewage delivered into the City's facilities shall not:

(1) Be of such a nature and delivered at such a rate as to impair the hydraulic capacity of such facilities, normal and reasonable wear and usage excepted;

(2) Be of such a quantity, quality, or other nature as to impair the strength or the durability of the sewer structures, equipment, or treatment works, either by chemical or by mechanical action;

(3) Be of such a quantity, quality, or other nature as to create flammable or explosive conditions in such facilities;

(4) Have a flash point lower than 187° F, as determined by the Tagliabue (Tag.) close cup method;

(5) Have a pH value lower than 6.0 or greater than 10.0 or otherwise contain chemical properties which are hazardous or capable of causing damage to any part of the System or to personnel;

(6) Include any radioactive substance, except as otherwise hereinafter set forth, unless the Manager of Public Works shall have written

consent to its inclusion;

(7) Include any garbage other than that received directly into the Sewer System from domestic and commercial garbage grinders in dwellings, restaurants, hotels, stores, and institutions, by which such garbage has been shredded to such a degree that all particles will be carried freely under flow conditions normally prevailing in public sewers with no particle greater than one-half (1/2) inch in any dimension; and

(8) Include night soil or septic tank pumpage (except by special permission in writing from the Manager of Public Works at such points and under such conditions as the Manager may stipulate in each permit).

e. Prohibited Sewage and Wastes.

None of the following described sewage, waters, substances, materials or wastes shall be discharged into the Sanitary Sewerage System:

(1) Any solid or viscous material which could cause an obstruction to flow in the sewers or in any way could interfere with the treatment process, including as examples of

such materials but without limiting the generality of the foregoing, ashes, wax, paraffin, whole blood, cinders, sand, mud, straw, shavings, metal, glass, rags, lint, feathers, tars, plastics wood and sawdust, paunch manure, hair and fleshings, entrails, lime slurries, beer and distillery slops, grain processing wastes, grinding compounds, acetylene generation sludge, chemical residues, acid residues, food processing bulk solids, snow, ice, and all other solid objects, materials, refuse, and debris not normally contained in sanitary sewage.

(2) Sludge or other material from sewage or industrial waste treatment plants or from water treatment plants.

(3) Water which has been used for cooling or heat transfer purposes without recirculation, discharged from any system of condensation, air conditioning, refrigeration, or similar use.

(4) Water accumulated in excavations or accumulated as the result of grading, water taken from the ground by well points, or any other

drainage associated with construction.

(5) Any liquid or vapor having a temperature higher than 150° F or exceeding any lower limit fixed by the Manager of Public Works to prevent odor nuisance where the volume of discharge represents a significant portion of the flow through a particular sewer.

(6) Any water or wastes containing grease or oil or other substances that will solidify or become discernably viscous at temperatures between 32°F and 150°F.

(7) Any water or wastes containing emulsified oil or grease exceeding 75 parts per million of ether-soluble matter. The poundage permitted per day from any establishment may be subsequently limited depending upon ether-soluble content of the sewage delivered to the Public Sewage Treatment Plants.

(8) Any gasoline, benzine, naphtha, fuel oil, lubricating oil, or other flammable or explosive liquid, solid, or gas.

(9) Any wastes with phenolic compounds over 10 ppm, expressed as phenol. These limits may be modified by the Manager of Public Works if

the aggregate of contributions throughout sewage service area create treatment difficulties or produce a plant effluent discharge to the receiving waters which may be prohibitive.

(10) Any wastes with hydrogen sulfide, sulphur dioxide, or nitrous oxide over 10 ppm.

(11) Any cyanides or compounds capable of liberating hydrocyanic acid gas over 2 ppm, expressed as hydrogen cyanide from any individual outlet, the discharge of any cyanides in lesser amounts so to be permitted only upon evidence of satisfactory and continuous control of the concentration and the volume of the discharge.

(12) Any wastes that contain a corrosive, noxious, or malodorous material or substance which (either singly or by reaction with other wastes) is capable of causing damage to the System or to any part thereof, of creating a public nuisance or hazard, or of preventing entry into the sewers for maintenance and repair.

(13) Any wastes that contain concentrated dye

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wastes or other wastes that are either highly colored or could become highly colored by reacting with any other wastes.

(14) Any water or wastes containing a toxic or poisonous substance in sufficient quantity to injure or to interfere with any sewage treatment process, to constitute a hazard to humans or to animals, or to create any hazard in the waters which receive the treated or untreated sewage, the twenty-four (24) hour average concentration of certain toxic substances in sewage as it arrives at the City and County of Denver Treatment Plant, not to exceed the following:

(1)	Iron as Fe	15 parts per million
(2)	Chromium as Cr (hexavalent)	5 parts per million
(3)	Copper as Cu	3 parts per million
(4)	Zinc as Zn	2 parts per million
(5)	Chlorine Demand	30 parts per million

and the concentration at any time shall not exceed three (3) times the average concentration limits stated above, and contributions from individual establishments shall be subject to control in volume and concentration by the Manager of Public Works.

(15) Any water or wastes containing the discharge of acid iron pickling wastes or plating solutions unless pretreated to the satisfaction of the Manager of Public Works.

(16) Any radioactive toxic isotopes of over 100 days' half life, the radioactive isotopes I^{131} and P^{32} as used at hospitals not being prohibited if properly diluted at source.

(17) Any wastes which are unusual in composition, i.e., contain an extremely large amount of suspended solids such as sodium chloride, calcium chloride, or sodium sulfate; contain substances conducive to creating tastes or odors in drinking water supplies; otherwise make such waters unpalatable even after conventional water purification treatment; or are in any other way extremely unusual unless the Manager of Public Works determines that such wastes may be admitted to the System or shall be modified or treated before being so admitted.

(18) Any material or substance not specifically

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mentioned in this section which is in itself corrosive, irritating to human beings and animals, toxic, noxious, or which by interaction with other wastes could produce undesirable effects, including deleterious action on the Sewerage System or on any part thereof, could adversely affect any treatment process, could constitute a hazard to humans or to animals, or could have an adverse effect upon the receiving stream.

13. PRETREATMENT FACILITIES:

The following Rules and Regulations shall apply to the installation of pretreatment facilities:

a. If any waters or wastes are discharged, or are proposed to be discharged to the public sewers, which waters contain the substances or possess the characteristics enumerated in Section 12 and which in the judgment of the Manager may have a deleterious effect upon the Sewerage Works, processes, equipment, or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the Manager may:

   (1) Reject the wastes;

   (2) Require pretreatment to an acceptable

condition for discharge to the public sewers;

(3) Require control over the quantities and rates of discharge, and/or

(4) Require payment to cover the added cost of handling and treating the wastes not covered by sewer charges under the provisions of Article 167.2-1. of the Revised Municipal Code.

If the Manager permits the treatment or equalization of waste flows, the design and installation of the plants and equipment shall be subject to the review and approval of the Manager and subject to the requirements of all applicable codes, ordinances, and laws.

b. Grease, oil, and sand interceptors shall be provided when, in the opinion of the Manager, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand, or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the Manager and shall be located as to be readily and easily accessible for cleaning and inspection.

c. Where preliminary treatment or flow-equalizing facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense.

14. SEWER CONNECTION PERMITS.

A sewer connection permit shall be required for the connection of building sewers to the sewerage system of the City. This permit will be issued only when the person to do the work is licensed by the City to perform such work, and only then if the Manager has previously issued a Sewer Use Permit to the owner or tenant of the building for which the sewer connection permit is desired.

a. Application.

The applications for a sewer connection permit shall be on forms provided by the Manager, and shall contain the following general information:

(1) The Name and Address of the owner of the building.

(2) Identification of the Sewer Use Permit.

(3) Name and Address of the person making the sewer connection.

(4) Location of the building for which the

connection is desired.

(5) Designation of the City sewer to which the building sewer will be connected.

(6) Legal description of the property to be occupied by the building desiring connection.

b. Dependent upon the data contained in the general information, the Manager may require that more specific information be supplied with the application for the Sewer Connection Permit, as follows, but not restricted:

(1) Plot plan indicating:

  (a) Property lines.

  (b) Location of building, or buildings, on the property.

  (c) Location of City sewer to which the building sewer will be connected.

  (d) Location of the building sewer, or sewers.

(2) Profile of the building sewer, or sewers.

(3) Specifications to be used in the construction of the building sewer and connections.

b. Regulations pertaining to building sewers and connections.

(1) No unauthorized person shall uncover, make any connections with or opening into, use,

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alter, or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Manager.

(2) A permit and inspection fee as established by the Manager for the building sewer permit shall be paid to the City at the time the application is filed.

(3) All costs and expense incident to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the City from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.

(4) A separate, independent, and unextended building sewer shall be provided for every building, except where the building, or buildings, and the property occupied by the building, or buildings, are in single ownership, and if the owner will covenant that the said property and improvements will remain as one ownership and if he will record the covenant with the Recorder, then the Manager may issue an extended or multiple building connection permit as the situation may warrant.

(5) Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the Manager, to meet all requirements of the Revised Municipal Code and these Rules and Regulations.

(6) The size, slope, alignment, materials of construction of a building sewer, and the methods to be used in excavating, placing of the pipe, jointing, testing, and backfilling the trench, shall all conform to the requirements of the building code or other applicable Rules and Regulations of the City.

(7) Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor. In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such building drain shall be lifted by an approved means and discharged to the building sewer.

(8) No person shall make connection of roof downspouts, exterior foundation drains, areaway drains, or other sources of surface runoff or groundwater to a building sewer or

building drain which in turn is connected directly or indirectly to a public sanitary sewer.

(9) The applicant for the building sewer permit shall notify the Manager when the building sewer is ready for inspection and connection to the public sewer. The connection shall be made under the supervision of the Manager or his representative.

(10) All excavations for building sewer installation shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City.

c. Denial of Sewer Connection Permits.

The Manager may deny the connection of building sewers with the City Sewer System for any of the following reasons, or any other reason he determines represents the best interests of the City:

(1) The City sewer system is not available (See 15).

(2) Failure of the applicant to provide

information requested in the application.

(3) Information supplied in the application indicates that the regulations for sewer connections would not be complied with.

(4) Applicant is not qualified to make the requested connection.

(5) A Sewer Use Permit has not been issued.

(6) Conditions of the Sewer Use Permit have not been complied with.

(7) Release of person or connector having jurisdiction of use of sewer for which the connection is requested is not obtained.

(8) Construction of the building sewer or the connection to the City sewer does not conform to rules and regulations or codes of the City.

15. AVAILABILITY OF SEWER SERVICE.

Prior to the issuance of either a sewer use permit or a sewer connection permit, the Manager shall determine if sewer service is available either by a City sewer or by a sewer in which the City has contractual rights. He shall also determine the conditions whereby the sewer service may be available, or how the service may be made available.

a. Sewer service is available when an adequate City sewer is adjacent to the property on which the building to be served can be connected according to the regulations of Section 14.

b. Sewer service may be conditioned upon the release of rights that third parties have in the sewer that is available for connection.

c. Sewer service may be conditioned upon the acknowledgment of the owner of the property to be served that there will be or may be future assessments to that property for additional sewer service to be financed by Local Public Improvement Districts.

d. Sewer service may be made available by the extension of the City sewer system to provide a sewer adjacent to the property to be served.

   (1) If immediate service is desired the extension of the City sewer shall be borne by the persons requesting the extension, and the design, specifications, permits, and construction requirements shall be in accordance with Article 338A of the Revised Municipal Code, "Private Designing, Planning, and Construction of General Public Improvements."

   (2) If immediate service is not desired, then the person, or persons, desiring the extension

may petition the Manager to create a Local Public Improvement District to finance the proposed construction and all properties that can be served by the extension will be assessed in proportion to their benefit due to the extension.

16. SUBMISSION OF DESIGNS, PLANS, AND SPECIFICATIONS OF PRIVATE SEWERAGE SYSTEMS TO THE MANAGER FOR HIS APPROVAL.

a. Where required, the following components of private sewerage systems shall be approved as to design and detailed plans and specifications:

(1) Sewage flow meters.
(2) Water supply meters.
(3) Inspection chambers.
(4) Control manholes.
(5) Sampling chambers.
(6) Pretreatment facilities.
(7) Sewage flow control devices.
(8) Building sewers.

b. The Manager may require that these designs, plans, and specifications be submitted by a Professional Engineer, and in most instances this will be the requirement.

c. Where designs, plans, and specifications are required to be approved as a condition of sewer use or connection these respective permits shall not be issued by the Manager until the approvals have been executed.

d. In some instances the Manager may require the submission of designs, plans, and specifications of water using or disposing facilities, e.g.,

   (1) Swimming Pools.
   (2) Car Wash Facilities.
   (3) Cooling Units.
   (4) Boilers.
   (5) Air Conditioning Units.
   (6) Etc.

17. DISCHARGE OF SEPTIC TANK WASTES.

No septic tank wastes shall be discharged into sewerage systems of the City except as follows:

a. The person discharging the septic tank wastes shall be licensed by the City to perform this type of service.

b. A fee shall be paid to the City according to the current fee schedule established by the Manager for the disposal of Septic Tank Wastes.

c. The person desiring to dispose of septic tank wastes into the City's sewerage system shall make application to the Manager for permission to do so. This application shall contain the following information:

(1) Name and address of person, or company, requesting permission.

(2) Address of the location of the septic tank.

(3) Type of sewage discharged into the septic tank. (Domestic, Industrial, etc.)

(4) Quantity of septic tank waste in gallons.

(5) Identification of the driver and vehicle delivering the septic tank waste to the point of disposal.

(6) Date that the disposal will be made.

d. The Manager may deny permission to discharge septic tank wastes for the following reasons:

(1) If he suspects that the contents are deleterious waste.

(2) If the previous record of the applicant is such that it is not desirable for the City to allow him to use the sewerage system for the purpose of disposing of septic tank wastes.

(3) For any other reason whereby, in his opinion, the discharge of septic tank waste into the

sewerage system would be detrimental to the City.

e. The Manager may issue a permit for the discharge of septic tank wastes.

  (1) Form of permit:

    (a) Name and address of person delivering the waste for discharge.

    (b) Conditions of Permit:

      0.1) Location of discharge.

      0.2) Time of discharge.

      0.3) Pretreatment.

      0.4) Rate of discharge.

      0.5) Inspection during discharge.

f. The Manager may issue a policy and procedure, and make amendments thereto from time to time, relative to the disposal of septic tank waste.

18. ADJUSTMENT OF INEQUITIES.

a. The Manager will make adjustments in order to remove inequities in sewage service charges to individual customers. Some examples of inequities are as follows:

  (1) A leak in the private water system.

  (2) Use of water that has its ultimate disposal to points other than the City's sanitary

sewerage system.

(3) Error in the customer classification.

(4) Error in the determination of strength indexes of an Industrial Waste Class Customer.

(5) Error in the calculation of either the basic sewage service charge or the surcharge.

b. The procedure to be followed in the adjustment of inequities is as follows:

(1) The customer makes application to the Manager requesting that his charges be reviewed. This application shall contain the following information:

(a) Name and address of the party applying.

(b) Address of the building being served.

(c) Period for which the applicant desires an adjustment of sewage service charges.

(d) An explanation of why the applicant believes that the charges are inequitable.

(e) Additional information and supporting data as desired by the applicant.

(2) The Manager investigates the claim, reviews the facts, and then decides as to whether an adjustment is in order or not.

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(3) If the Manager decides that an adjustment is in order, he then takes the necessary steps to make that adjustment and notifies the applicant of his actions.

(4) If the Manager decides that an inequity does not exist, he notifies the applicant that such is the case.

(5) If the applicant is dissatisfied with the Manager's ruling, he may ask that the Manager refer the case to the Waste Water Control Hearing-Advisory Board for their review.

(6) The Hearing-Advisory Board reviews all facts and the decision of the Manager and advises him of their finding in the case. They may recommend that he alter his decision, or they may recommend that his decision stand.

(7) The Manager is not bound to accept and act upon the recommendations of the Hearing-Advisory Board.

(8) The Manager notifies the applicant of the findings of the Hearing-Advisory Board and of his decision in light of their findings.

(9) The Manager takes whatever steps are necessary to adjust charges, if necessary.

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19. HEARING-ADVISORY BOARD.

In order that there may be a review of decisions made by the Manager in his administration of Article 167 of the Revised Municipal Code, and these Rules and Regulations, a Hearing-Advisory Board is hereby established.

a. Creation.

The members of the Board shall be appointed by the Manager and may be removed only for cause by the Manager. The first Board shall be appointed with one member to serve a one-year term, one member to serve a two-year term, one member to serve a three-year term, one member to serve a four-year term, and one member to serve a five-year term. All subsequent appointments shall be for five-year terms. Any vacancy which occurs in the Board shall be filled by the Manager for the unexpired term of any member whose term became vacant. Members of the Board shall serve without pay. The Board shall at all times be composed of at least one person representing one of each of the following categories: a licensed engineer, a representative of business, a representative of industry, a representative of home owners, and a representative of the community as a whole.

b. The staff of the Board shall consist of a Secretary and such other assistants as may be assigned from time to time by the Manager. The Secretary shall be the custodian of the records of the Board, shall conduct official correspondence and generally supervise the clerical and technical work of the Board. The Manager will assign the duties of the Secretary as a part-time function of a present employe of the Department of Public Works.

c. Rules for Proceedings Before Board.

The Board shall adopt rules governing all proceedings before it. Such rules shall provide and require that:

(1) All hearings shall be open to the public.

(2) Due notice of all hearings shall be given to the applicant and to the Manager of Public Works, the City Engineer, and the Sanitary Engineer.

(3) At any hearing a representative of the agencies aforesaid and any other interested party may appear in person or by agent or by attorney, offer evidence and testimony and

cross-examine witnesses.

(4) All witnesses shall be sworn or shall affirm their testimony in the manner required in courts of record.

(5) All evidence and testimony shall be presented publicly. The Board may take judicial notice of facts to the same extent and in the same manner as courts of record and may consider any relevant facts within the personal knowledge of any members of the Board which are stated into the record by such member.

(6) For each case or matter heard, the Board shall cause a record of its proceedings to be prepared. The record of proceedings shall include all documents and physical evidence considered in the case together with a stenographic record of the public proceedings. The transcribed stenographic record does not require verbatim testimony offered by all witnesses in the case except as requested by any member of the Board. The record of proceedings of the Board at private or executive sessions shall show the grounds for the decision and the vote of each member on each question, or, if absent, or

failing to vote, shall indicate such fact. The record of proceedings shall be filed immediately in the office of the Board and shall be a public record.

(7) The Board shall establish a fee schedule of such a nature that the reasonably determinable costs of the hearings are paid by the applicant, but in no case shall the fee be less than $25.00. Said fee shall be payable upon application, and no application shall be considered until such fee shall be paid or waived, as hereinafter provided. Payment of the fee may be waived by the concurrent vote of four members of the Board upon the filing of an affidavit by the applicant that he is financially unable to pay the fee. Also, the fee will be returned to the applicant if the Board recommends in favor of the applicant, irrespective of the fact that the Manager of Public Works may not concur with the recommendation.

d. Duties of the Board.

Subject to the limitations enumerated herein, the Board shall have the following duties in connection with Article 167 of the Revised Municipal Code and these Rules and Regulations, but with no other portion of the Revised Municipal Code as amended. In exercise of its duties the Board may recommend that the Manager reverse or affirm, wholly or partly, or modify the order, requirement, decision or determination appealed from the Manager.

(1) Administrative Review.

To hear appeals where it is alleged there is error in an order, requirement, decision, or determination made by an administrative official in the enforcement of Article 167 of the Revised Municipal Code.

(2) Variations.

To recommend, upon appeal in specific cases, such variations from the terms of the Rules and Regulations, subject to terms and conditions recommended by the Board, as will not be contrary to public interest where, owing to exceptional and extraordinary circumstances, literal enforcement of the provisions of said Rules and Regulations would result in unnecessary hardship.

e. Oaths and Attendance of Witnesses.

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For the purpose of exercising the duties enumerated herein, the Board shall elect a chairman and vice chairman. The chairman, or in his absence, the vice chairman shall administer oaths to or accept affirmations from witnesses and may compel the attendance of witnesses.

f. Limitations on Duties of Board.

(1) Concurring Vote Required.

The concurring vote of four members of the Board shall be necessary to recommend the reversal of any order, requirement, decision, or determination of any administrative official, or to recommend any variation in these Rules and Regulations.

(2) Findings of Fact.

Every decision of the Board shall be based upon findings of fact and every finding of fact shall be supported in the record of its proceedings.

(3) Duties Strictly Construed.

Nothing herein contained shall be construed to empower the Board to change the terms of these Rules and Regulations. The duties of the Board shall be so construed that the enforcement of these Rules and Regulations and of Article 167 of the Revised Municipal Code are the sole responsibility of the Manager of Public Works, and that the function of the Board is strictly advisory to the Manager.

20. ORDERS FOR COMPLIANCE WITH ORDINANCE AND RULES AND REGULATIONS.

If the Manager determines that a person is in violation of the Revised Municipal Code or of these Rules and Regulations, he shall issue an order to that person containing, at least, but not restricted to, the following information:

(a) Name of person cited for the violation.
(b) Location of the violation.
(c) Details of the violation.
(d) Action to be taken by the person cited.
(e) Time limit for the action to be taken.
(f) Recommendations, if any.
(g) Penalty for non-compliance.)

* * *

MR. ROZICH: This was a report sent to me by Dr. McCluskie of the City Health Department.

MR. STEIN: Right.

MR. ROZICH: I have here two letters from Coors, the first one from the Coors Porcelain Company. It reads:

"November 4, 1966

"Colorado Water Pollution Control Commission
Colorado State Dept. of Public Health
4210 11th Ave.
Denver, Colorado
ATTENTION: Mr. Frank Rozich,
Technical Secretary

Dear Mr. Rozich:

"Due to the results of a study, made by the Federal Water Pollution Control Administration on the South Platte River Basin, Coors Porcelain Company has been actively engaged in a study of the effluent being discharged by it into Tucker Gulch (a tributary of Clear Creek).

"The Plant Engineering Department and the Research and Development Department of Coors Porcelain Company are in the process of conducting a planned series of studies. The purpose of these studies are to determine the various 'in plant' sources, the physical properties, and the volume "of the discharged effluent. The results of these studies will enable the Coors Porcelain Company to intelligently arrive at a conclusion concerning the type and size of installation required to purify the effluent.

"Preliminary tests have indicated that the effluent contains inorganic settleable clays that can not be discharged directly into the city sewage system because these clays would eventually accumulate within the system causing blockage problems.

"It will take approximately one year to complete the preliminary studies, design, and install the necessary equipment to process the effluent. Therefore, the Coors Porcelain Company would expect to complete this project around January 1, 1968.

Yours truly,
Coors Porcelain Company
/s/ Don Philp
Plant Engineer

cc: Joe Coors - President of Coors Porcelain Company
Howard Lewis - Vice Chairman, C.W.P.C.C.

DP/10"

MR. STEIN: Mr. Rozich, are you going to supply these letters for the record in total?

MR. ROZICH: I have arranged that.

MR. STEIN: Because I think it would be best for the record, if you have no objection, that you continue reading as you are, but when they appear in the record, they will appear dated and signed, with all the other information.

MR. ROZICH: All right.

MR. STEIN: Thank you.

MR. ROZICH: I have another letter from the Adolph Coors Company. This is with regard to the brewery, I believe.

"ADOLPH COORS COMPANY
Established 1873
GOLDEN, COLORADO, U.S.A.
November 8, 1966

"Colorado Water Pollution Control Commission
Colorado State Dept. of Public Health
4210 11th Avenue
Denver, Colorado

Attention: Mr. Frank Rozich, Technical Secretary

Dear Mr. Rozich:

"In regards to the South Platte River Pollution Study, the activities of the Adolph Coors Company can be reported as follows:

F. Rozich

"Under construction at present is a facility to add twelve new aeration units. These are scheduled for completion in January of 1967. In the design stage is a new 120' diameter secondary clarifier. This facility is scheduled for completion in June of 1967.

"Preliminary plans have been made for new influent mechanism equipment. A pilot sludge drying plant has been installed and research is under way to select a satisfactory method of sludge drying. A plant to dry all sludge is contemplated when methods have been determined.

"Also, an extension of our present chlorine contact basin is being studied. This basin will provide 9 MGD - 30 minute contact time, where our present facility provides 3 MGD - 20 minute contact. Our present Fisher-Porter chlorinators are being reworked by the manufacturer to operate on chlorine demand rather than strictly by flow volume. This will give us better control of our chlorine dosage.

"It is difficult to predict the time involved in our various research projects, but they will be completed as early as practical.

"Yours truly,

/s/ E. O. Edlund

Adolph Coors Co.

V. P. Engineering

EOE/rp

cc: Howard Lewis

Industrial Representative

Water Pollution Control Commission"

This is a report made to the Colorado Water Pollution Control Commission by the Great Western Sugar Company:

"11/8/66

"TO: COLORADO WATER POLLUTION CONTROL COMMISSION

"This report will bring up to date the activities of the Great Western Sugar Company in the field of water pollution abatement in the State of Colorado.

"At the moment, we are very excited and pleased over the apparent success of the new closed flume water recycling system now in operation at our Brighton plant. Since beginning our operation there nearly 30 days ago, the flume water formerly wasted to the South Platte River has been screened, treated, con-

"ditioned and reused to the extent that none of this water has been discharged to the river. Our only remaining concern is our ability to keep this system operating properly during periods of extreme cold weather. If this system continues to perform throughout the operating season, we will have solved not only the BOD problem, but the coliform pollution problem as well. Attached is a data sheet showing the analytical results taken on this system October 22, 1966.

"The Longmont tailings recovery system is working very well and the lagoon constructed last summer is removing all the settleable solids and most of the suspended solids.

"The new Eaton pulp dryer is also working well and will reduce the BOD discharge from that plant by over 50%.

"As to the future, we have the following plans.

"October 18, 1966, the company announced its intention to cease operations at its Windsor, Colorado, plant after the close of this operating season. One of the contributing factors to this decision was the water pollution problem existing there. At the conference in Denver on April 27 and 28, 1966, the Federal

F. Rozich

"Water Pollution Control Administration charged the Windsor plant with a water pollution population equivalent of 440,000. This was over two to three times the level at most of our other plants. This amount of water pollution can only be materially reduced by the construction of a pulp dryer and other reuse systems. The capital costs of these installations would be over a million dollars. This, coupled with the fact there is a declining production of sugar beets in that area, indicated that the long-range prospects were not good enough to justify this expenditure and maintain operation of this plant.

"A pulp dryer will be constructed at the Sterling plant before the 1967 operating season. With this installation and the Windsor closing, all of our plants in Colorado will be equipped with pulp dryers which will eliminate the serious pollution caused by Great Western.

"Authorizations are being requested to install flume water recirculating systems similar to Brighton at Longmont and Eaton in 1967. Since Eaton already recycles cooling water, it is possible that arrangements can be made so no waste water of any kind

F. Rozich

"will reach the river from Eaton.

"Plans are being drawn for a flume water screen system at Ovid in 1967, incorporating a new type of fine screen. This installation, we believe, will eliminate the pollution of the South Platte at the Nebraska border that is caused by our plant. We are also arranging to provide the City of Ovid with some of our land to construct a sewage lagoon which we will use jointly.

"The British Columbia Research Council, under contract to Great Western, has been doing laboratory studies on the Johnstown waste waters to determine if the high level of BOD removal suggested can be accomplished in conventional systems. Their first report, dated Nov. 2, 1966, recommended **that aerobic** treatment be used for these wastes. Engineering studies are now under way and next spring either a pilot plant system or a partial full-scale system will be under study.

"All of these proposed installations will require an expenditure of nearly one and a half million dollars. This cost, together with operating costs of several hundred dollars per day on these flume water systems, will be a financial burden, but "will make a very great and important contribution to improving the water quality of the South Platte River and its tributaries during the months of October, November, December and January.

"Our program for 1968 will be developed after we analyze the results of our 1966 and 1967 work.

/s/ Lloyd T. Jensen
Vice President - Operations
Great Western Sugar Company"

FORM 422 1000 6-59 FADS 100

CERTIFICATE OF ANALYSIS

THE GREAT WESTERN SUGAR COMPANY
RESEARCH LABORATORY

Serial No. 1568 Denver, Colo. November 3, 1966

Laboratory Sample No.

Description: Six samples of water from the Brighton Factory and environs for BOD and related analysis.

Analysis Analysis of waters from Brighton Factory, sampled October 27, 1966.

Sample	pH	DO	BOD	COD	Total Solids	Total Vol. Solids	Total Suspended Solids	Total Vol. Sus. Sols.
** Compartment C Brighton Factory	11.5	0.0	820*	1385	1176	664	90	50
McCan Ditch	8.0	12.1	11	94	1260	398	18	18
Factory Outlet To River	7.8	3.8	18	37	1104	304	62	40
Condenser water 4	8.4	4.6	12	22	1126	314	52	48
River above factory outlet	7.4	3.4	44	70	1062	328	128	56
River below factory outlet	7.5	4.1	28	73			108	70

* No duplicate check on analysis
** Effluent from compartment C, Main Sewer Settling Lagoon, Brighton Factory

L. T. Jensen
Whitney Newton, II
Steve Force
Floyd Miller - Brighton
Tom Clements - Brighton
George Sisler - Research Lab.

George Sisler
In Charge of Laboratory.

F. Rozich

I mentioned earlier the draft of the proposed legislation to license the feedlot industry. In Section 9 of this draft, I believe they do cover many of the recommendations that were mentioned by Mr. Bauer. It reads as follows:

> "SECTION 9. Standards of operations for feed lots. (1) An operator shall qualify for a feed lot license if he shall:
>
> > "(a) provide reasonable methods for the disposal of animal excrement, the control of dust, and the protection of any adjacent rivers, streams, or other bodies of water;
> >
> > "(b) provide suitable chemical and scientific control procedures for the prevention and eradication of insects and pests;
> >
> > "(c) provide adequate drainage from the feed lot and prevent collection of surface waters thereon;
> >
> > "(d) have available for use at all times adequate mechanical means for scraping, cleaning and grading the area of the feed lots;
> >
> > "(e) provide concrete or other suitable aprons adjacent to permanently affixed feed bunks, water tanks, and feeding devices;

"(f) and operate his feed lot in conformity with regulations adopted by the board pursuant to the standards of operations set forth herein.

"(2) Operation of any feed lot in compliance with such standards shall be deemed to be prima facie evidence that a nuisance does not exist."

I have a letter from the Tenneco Oil Company. It reads as follows:

"TENNECO OIL COMPANY - P.O. BOX 957 -
DENVER, COLORADO 80201

October 31, 1966

"Colorado Dept. of Public Health
Water Pollution Control Division
4210 East 11th Avenue
Denver, Colorado 80220

Attention: Mr. Frank Rozich, Director

Dear Mr. Rozich:

"We have delayed reporting to you about the current status of our wastes as of September 21, 1966, because we had hoped to have a complete evaluation of our new sour water stripper and phenol solvent extraction system ready at this time.

F. Rozich

"Operating problems and a shutdown on our catalytic cracking unit has not allowed a complete tabulation of results. We hope to have results some time after the first of January.

"The status of discharged wastes as of October 1, 1966, has improved in that we have decreased the effluent into Sand Creek approximately 60%, yet we have not increased the level of objectionables.

"Yours very truly
TENNECO OIL COMPANY
/s/ R. R. Rankin
Refinery Superintendent

CC: A. R. Dudley
RRR:en"

This next letter is from the Continental Oil Company and states:

"CONTINENTAL OIL COMPANY
P. O. Box 40
Commerce City, Colorado 80022
September 20, 1966

"Mr. Frank Rozich, Director
Water Pollution Control Division
and Technical Secretary

F. Rozich

"Water Pollution Control Commission
State of Colorado
Department of Public Health

Dear Mr. Rozich:

"The 'Report to the Second Session of the Conference in the Matter of Pollution of the South Platte River Basin, April 27, 1966' indicated that Continental Oil Company has inadequate waste water treatment with regard to phenol and chromium content. Your letter dated August 25, 1966, asks for the current status of the waters we are discharging as well as our time schedule for improvement.

"Recent analyses of Continental's outfall into the Burlington Ditch have averaged 700 ppb of phenol and 3.4 ppm of trivalent chromium (no hexavalent chromium was found by analysis). The phenol content of the discharge from Continental Oil Company's Asphalt Plant (formerly the Empire Petroleum Company) into Sand Creek has most recently averaged 240 ppb.

"Continental Oil Company has for years been aware of the problems of water pollution and has taken many steps to decrease the contaminants in the effluent waste water from our refinery. We feel we "have cooperated with the governmental agencies in the past, and it is our intention to continue to do so; however, I would like to make the following points in connection with the recommendations of this Report:

"1) The philosophy of effluent standards, as suggested by this Report (rather than stream standards) seems unnecessarily wasteful and restrictive. In other words, if the main stream has the ability to dilute any substance in an inflowing stream to a concentration which, on the basis of sound technical data, is not harmful to the downstream use, then it does not seem justified to spend resources to overpurify the inflowing stream.

"2) It is our belief that a phenol study of 25 ppb is also unnecessarily restrictive. Many technical study groups, including those from the American Petroleum Institute, the Manufacturing Chemists Association*, and the State of California** recommend 200 ppb as providing adequate

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* See attached Reference No. 1

** See attached Reference No. 2

F. Rozich

protection for downstream use for irrigation, stock watering, and fish and aquatic life.

"3) The Report is not clear as to the state of the chromium that is objectionable, whether trivalent or hexavalent, and to what degree this element must be removed.

"Our engineers are actively studying what procedural and equipement changes would be necessary to reduce the concentration of phenol in our plant effluents. While these studies are not yet complete, they are sufficiently advanced that we believe facilities can be installed to supplement our existing bio-oxidation plant to get the phenol content of the total plant effluent down to a realistic standard of 200 ppb. It is expected that these improvements will cost in the neighborhood of $50,000 and can be in operation by the end of 1967. On the other hand, our chemists and engineers have some question whether the state of the technology is sufficiently advanced at present to consistently keep the phenols in our effluent water at a 25 ppb level. It is anticipated if we do develop such a scheme, the cost will be several times that cited above.

"Chromium is used in our plant circulating cooling water to control corrosion of the process equipment. Although the recommendations of the Report are rather vague with regard to this substance in our waters, we are prepared to switch to a different type of cooling water corrosion protection treatment on a trial basis about the first of the year, 1967. We know that this substitute treatment will increase our annual operating costs modestly, but more importantly there are indications from others that have used this treatment that corrosion of our refinery equipment will increase to some extent. If we can live with this increased corrosion, well and good; if not, we will probably have to revert to the chromium treatment and devise some method of removing or mitigating this element.

"Yours very truly,

L. B. Parks

Manager

Denver Refinery

LBP-DL

* * *

REFERENCE NO. 1

SOURCE MATERIALS ON WATER QUALITY CRITERIA

June 1966

Compiled by the

Water Resources Committee

Manufacturing Chemists Association

1825 Connecticut Avenue

Washington, D. C. 20009

REFERENCE NO. 2

WATER QUALITY CRITERIA

Second Edition

Edited by JACK EDWARD McKee

Professor of Environmental Health Engineering

W. M. Keck Laboratory of Environmental Health Engineering

California Institute of Technology

and

HAROLD W. WOLF

Senior Sanitary Engineer

Division of Water Supply and Pollution Control

U.S. Public Health Service

Prepared with Assistance from

Division of Water Supply and Pollution Control

F. Rozich

U.S. Public Health Service
Department of Health, Education, and Welfare
1963
THE RESOURCES AGENCY OF CALIFORNIA
STATE WATER QUALITY CONTROL BOARD
Publication No. 3-A"

I believe that is all I have to report.

MR. STEIN: Is that all you have on the feedlots?

MR. ROZICH: I do have some letters from some of the feedlots, but since all of them did not reply, I felt I shouldn't read the few that we did receive.

MR. STEIN: Are there any comments or questions?

MR. CLARE: I would like to make a comment.

MR. STEIN: Mr. Clare.

MR. CLARE: Frank, in regard to the standards development that you referred to in the first part of your presentation, I have been authorized by our Commissioner to indicate that any help that we can give in development of the basis on which you will prepare the standards will be forthcoming. This has a very high priority with us.

In fact, I think you have a letter indicating that this assistance will be available.

MR. ROZICH: Yes. I believe you have a letter asking for how many engineers you can send us.

(Laughter.)

MR. CLARE: Well, that letter, I am sorry, did not arrive before I left Kansas City. However, I am looking forward to receiving it, and I can assure you that assistance will be forthcoming.

As you know, there is considerable information on the South Platte. There is also considerable information available in the Colorado Project, and similarly in the Arkansas Project. This leaves the Rio Grande in sort of a blank spot as far as we are concerned, but I can assure you that any help that we can give will be forthcoming. We will look forward to working with you.

MR. ROZICH: Thank you.

MR. STEIN: Thank you.

By the way, this was a very excellent report, but I would like to address myself to this.

I think one of the advantages of what we have done here is that Colorado has a leg up. We have had a team of twenty people for two and a half years. They have made specific recommendations as to water quality, and I think when you consider the crash programs that most of the States have had to go into to develop these standards, we have to consider ourselves pretty lucky on the South Platte in good measure that work has already been done and our recommendation has been made. I think we are way ahead on this.

I also think that given the report that you have given, Frank, there is as much progress being made here as in any complicated pollution situation. As a matter of fact, it is better. This is one of the more encouraging reports.

Obviously, in dealing with as many diverse sources as we do here, you cannot move evenly, but I think, as your report indicates, we are moving relatively evenly and are looking largely for clean-ups in 1968, 1969 and 1970, and if this can be done, I think we are achieving a remarkable result.

Your State staff and your Commission are to be commended, because I think the changes in the movement that I have seen in the years that I have come out here, are pretty remarkable, and I have been coming out here for quite a long time.

However, there are, as you know, in your report, as far as I can see, some soft spots. Generally the soft spots come back to the time schedule.

The Assistant Secretary and the Commissioner have also indicated that we must have an action program, and the action program talks in terms of the time schedule in which we are going to get the pollution abated.

In some of the reports you need further research, and I don't doubt that, because one of these reports came from an installation in Colorado that possibly has the best waste treatment record now. I think the Coors Company does. But in the reports on the remaining problems, there is no time schedule as to where they could cut this off, pending the result of research.

As far as I can see, in Continental Oil, we also have reverberations of an old philosophy, and, of course, there are differences in philosophy. "Let's use the water as much as we can in the assimilative capacity in the stream. Let's not overpurify the wastes, because why are we spending money unnecessarily?"

I think again, when I started in this field, 99 percent of the people used to talk that way. It has switched over. Now only 5 percent talk that way.

However, Continental went on and they talked about specifics, and it is my experience that we don't have to, in a sense, deal with philosophy in this, because that kind of philosophic difference takes a long time to resolve, if ever. However, we can, I am pretty sure, with Continental here, as we have in other places, arrive at specifics and a notion of what they should do specifically with their phenol and chromium wastes, and I don't think the philosophy will get in the way. We have worked that out in many, many other areas, and this probably will have to be done here.

The next one is the feedlots. I listened here to you on your report on this. A feedlot program, you say, will rely possibly on some legislation being passed.

Well, legislation is always problematical. I know that the Colorado Legislature has always been looked up to. However, Mr. Di Luzio and I have been dealing with the Congress for a long time, and I never like to bank on anything, or bank anything on what the Congress is going to do, or predict it.

I do think that this legislation might be the best way to get at the feedlot problem, but the Colorado Water Pollution Control Commission is a broad-base Commission, and as far as I can see, has authority to deal with pollution from all sources. I wonder if we might think whether legislation alone is the only way we can deal with the feedlot problems.

Now, I have left this for the last one here. I think the sugar beet one looks very, very promising. Again, I am not sure that we have specifically gone down the list of pounds of BOD a day recommended by our technical

F. Rozich

staff, going plant by plant and seeing if the sugar beet mills will meet these, and certainly that they are not going to exceed them, and the date that that is going to happen.

Again, I think we have to be very, very careful. This is not meant as any criticism because I recognize the industry problems. Since our last meeting just six months ago, I have seen more hope and more progress for dealing with the sugar beet wastes than I had seen for years. I think Great Western is making tremendous strides, but I also do think that we have to point out that we must think in terms of the pounds a day that you or we would agree upon, and a date for each plant by which that has to be accomplished.

I have emphasized, as you might suspect, because this is our function, the soft spots in the report. I would like to put this at the end, before I sign off, in perspective.

This report has been very encouraging and one of the best that I have seen in our experience.

I do have one more suggestion before I call on Dr. Cleere. In view of these spots, it may be that the conferees may wish to do what we have done in other areas of the country with considerable success, I think, such as Chicago and St. Louis, and that is to have periodic progress meetings, so that we can see how well the program is going.

You always have this problem with the load of polluters where they are all moving along kind of in concert, but it is like a flock of sheep or goats. I don't mean to be invidious in that. You have to sort of bring in the stragglers every once in a while, and I don't think it is a substitute for these periodic progress reports.

Thank you very much for a really good report.

Dr. Cleere?

STATEMENT OF DR. ROY L. CLEERE, CONFEREE AND EXECUTIVE DIRECTOR, COLORADO STATE DEPARTMENT OF HEALTH, DENVER, COLORADO

DR. CLEERE: Mr. Chairman, members of the Commission, ladies and gentlemen:

My report will be quite brief.

I am sure we are all grateful to the United States Public Health Service, Federal Water Pollution Control Administration, and the Department of the Interior, for the excellent study of the South Platte River Basin that is now being completed. This will be, at its completion, the first complete study of a major river basin in Colorado.

Certainly, the report of this survey has pinpointed all sources of pollution in the entire South Platte

River Basin.

The study report will also certainly serve as an excellent guide in the development of a blueprint for completely controlling pollution in the South Platte River Basin.

I am certainly pleased with the progress that is being made directed at completely controlling pollution in this river basin. I think we should keep in mind that the most significant step in ridding the South Platte River of pollution from human sources has been the installation of the Denver Metro Sewage Plant. For the first time in the history of Denver, and the same goes for most of the other municipalities and sanitation districts in this entire metro area, the human sewage will be and is, I should say, receiving adequate treatment.

I am also pleased with the cooperation that is being extended by other municipalities and industries in the South Platte River Basin.

I think, Mr. Stein, that you can look forward to good, sound standards, that are being developed by the Commission without delay. The Commission on Water Pollution Control is devoting attention to the development of these standards that will be practicable and desirable, and I know we can look forward to the completion of these standards

Dr. R. L. Cleere

at the earliest possible date.

I do know that the Commission and the Department of Health are also devoting attention to the development of a time-table or schedule which we think will be reasonable, but must be met by the municipalities that are not now treating human sewage adequately, and by the industries located in the South Platte River Basin.

We too are pleased with the progress that is being made by the Great Western Sugar Company, as well as by Coors and other major industries located in the South Platte River Basin. I think it was too much to expect of an industry such as the Great Western Sugar Company to spend all of the money that was necessary to treat its wastes by additional steps and procedures until the Denver sewage was receiving adequate treatment. It has been true that the waters used by this industry in the South Platte River came into the plants in a worse state of pollution than the waters that left these plants.

Several members of the Commission and several others from the State Department of Health had an opportunity to visit this new treatment process at the Brighton plant of the Great Western Sugar Company. I know we are all encouraged about the probability of the successful operation of this new treatment process. If it does prove to be successful, and we have every reason to believe that it will be, then we are confident that this same treatment process will be installed without delay by the sugar company in its other plants in the South Platte River Basin area.

In concluding, I would say, because of the renewed interest on the part of the State as manifested by the work of the Water Pollution Control Commission and the State Department of Public Health, and by cooperation that is being extended by municipalities and by industries in the South Platte River Basin, I am firmly convinced that within three years, certainly not later than four years, pollution from all sources in the South Platte River Basin will be brought completely under control.

Thank you very much.

MR. STEIN: Thank you, Dr. Cleere. Thank you very much for that statement, because I can remember the days when you first asked me to come out here, when we still had that little plant at Sand Creek in the old Department. What a distance we have gone since then!

Are there any further questions?

MR. CLARE: No.

MR. STEIN: If not, I think we have concluded the public presentations here. There is no one else who wishes to say something, is there?

(No response.)

MR. STEIN: We will recess for lunch and for our executive session, and be back in this room at three o'clock to make an announcement.

We stand recessed until three o'clock.

(Whereupon, at twelve o'clock noon, a luncheon recess was taken.)

AFTERNOON SESSION

3:00 p.m.

MR. STEIN: May we reconvene?

Thank you for bearing with us.

I do think we will have copies of the findings and conclusions of the conferees for distribution to all of those who want them here, so you don't have to frantically take notes. If you would see Mrs. Piere, in the yellow dress, she will be able to take care of you.

The conferees are on schedule, and I hope that sets a good example. We said we would be here at three o'clock, and here we are.

I am also very, very pleased to announce that the findings and conclusions of the conferees were unanimous.

I may say, for those people interested in river development, as we all are, and clean water, for those people who have problems and who have discharges, that the way we have hit the program on the South Platte River as far as the State and Federal agencies are concerned, in effect you are probably dealing with one. Our function is to help the State of Colorado with its program as much as we can.

With that, I will read the conclusions and recommendations, which were come to unanimously by the conferees.

"1. Pollution of the South Platte River Basin which endangers health and welfare caused by municipal and industrial discharges is occurring.

"2. The measures taken towards abatement of this pollution to date have not been adequate.

"3. The delays being encountered in abating such pollution are due to the complex technical nature of the problem and the large financial investment required for remedial measures.

"4. The Colorado Water Pollution Control Commission is commended for its active action program to abate pollution of the waters of the South Platte River Basin and the response of those responsible for discharges into the system is encouraging indeed.

"5. All discharges into the South Platte River Basin shall have adequate remedial or control facilities in full operation by June 30, 1971, so as to comply with water quality standards established by the Colorado Water Pollution Control Commission as approved by the Secretary of the Interior.

"6. Time schedules announced at the Conference for specific municipalities and industries which will fall within the above time schedule are approved.

"7. State and Federal authorities will have progress evaluation meetings at six-month intervals to determine compliance with the above requirements. At the first progress meeting, representatives of the Colorado Water Pollution Control Commission will supply specific time schedules for those sources of pollution for which time schedules were not supplied at this session of the Conference."

This concludes the findings and conclusions of the conferees.

Do any of the other conferees wish to say anything now?

(No response.)

MR. STEIN: We would like to thank you all for coming.

I do believe that this is a milestone in the program to clean up pollution of the South Platte River. At times during the two and a half years we despaired, but I think we have gotten together. I do think this program is good, is realistic, and it should take place with all the people in the Basin and industries doing their share. We do not believe it will impose a financial burden on any municipality which will impede its growth, or on any industry which will in any way degrade its competitive position.

If there is nothing further, the conference stands adjourned.

(Whereupon, at 3:15 p.m., the conference was adjourned.)

REPORTER'S CERTIFICATE

I, AL ZIMMER, do hereby certify that I was present at the time and place first hereinbefore set forth, the aforementioned parties appearing, that I took down in shorthand the entire proceedings had at said time and place; afterwards transcribed said notes; and that the foregoing 165 pages constitute a true, correct and complete transcript of my said notes.

Al Zimmer

(The following was submitted after the close of the record:)

UNITED STATES GOVERNMENT

MEMORANDUM

TO: Regional Director, FWPCA DATE: November 23, 1966

Kansas City, Mo.

FROM: River Basin Studies Coordinator, BCF

Ann Arbor, Michigan

SUBJECT: FWPCA South Platte Enforcement Action

As arranged in a November 9 telephone conversation with Mr. Lew Young of your staff we are sending the attached statement for insertion in the record of your South Platte Enforcement Action Hearing, Denver, Colorado, November 10, 1966.

/s/ Robert L. Schueler

Attachment

(RECEIVED
NOV. 28, 1966
South Platte River Basin
Project)

Statement of the Bureau of Commercial Fisheries, Department of the Interior, as part of the record of the FWPCA South Platte Enforcement Action Hearing, Denver, Colorado, November 10, 1966

The safeguarding and perpetuation of the fishery resources of the Nation is a major responsibility of the U. S. Bureau of Commercial Fisheries (Fish and Wildlife Act of 1956). Any practice or series of events which threatens fisheries directly or militates against the well-being of natural stocks even in the most subtle manner is of primary and overriding concern to us. We have pointed out repeatedly that changes are occurring in the Nation's aquatic environment -- changes that seriously threaten fishery resources and tend to deface the value and utility of this promised land. No single group or individual is responsible for these changes. It is the small addition contributed by one, compounded with those contributed by others, that results in creeping ruination of a stream, a lake, or a major river.

Frequently, water quality becomes degraded and competing water uses become detrimental so gradually but so positively that fishes and those who use them are in trouble long before the more obvious issues of human safety and welfare are threatened. Before the "public is aroused" valuable fisheries and the waters that produce them are lost or so deteriorated that great effort and expense are necessary for rehabilitation. We urge, therefore, a broad concept of pollution; a definition not necessarily restricted to bacterial counts, excesses of dissolved solids, gross deficiencies in dissolved oxygen or easily detectable changes in bottom fauna composition. We urge the establishment of water quality standards that have prevention of pollution as a goal; not a set of limits that will define the degree of deterioration to be tolerated or to which clean water can be defiled before action is taken to avert a national disgrace. We propose the establishment of acceptable and adjustable limits on quantities of phosphorus, nitrogen, and other basic nutrients or trace elements that trigger cycles of biological productivity frequently as damaging to natural waters as the original sources of so-called pollution. Of course, this proposal calls for research and development in chemical engineering and the techniques of treatment, a challenge any nation like ours should accept enthusiastically. Given such facility, we envision the deliberate environmental adjustments in the aquatic realm that have made agriculture in this country the envy of the world. We must and can learn to manipulate our "outfalls," effluents, or whatever we may call them to serve our ever-increasing population. We must abandon the concept of "waste discharge" in favor of the positive approach of "by-product use" to improve our capabilities in aquatic as well as terrestrial management.

As directed and authorized by Congress, the Bureau of Commercial Fisheries will continue its examination of lake and stream environments for water quality and for ecological appraisal. Experience has taught us that, frequently, troubles within one portion of a drainage have their origins in other, often remote, portions. Therefore, we must become aware and remain cognizant of the occurrences and practices in all portions of a drainage as large as that of the Missouri River that may threaten fish and wildlife. Consequently, our interest in the South Platte Enforcement Action is vital. We must also strive to develop means of restoring fishes that have already become victims of situations created by the carelessness, greed and shortsighted planning of parts of our society. This goal dictates that the outcome of this action becomes one with which we are directly concerned. There is no place for us but in the forefront of any and all efforts to restore and to maintain clean water conditions.

* * *